

OMM modular matrix router

36x36 DVI / HDMI + Stereo Audio Matrix Switch



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CHAPTER 1. INTRODUCTION AND INSTALLATION

The OMM2000 modular matrix router is a system that enables you to switch and route up to 36 different DVI / HDMI or SDI sources with audio and connect to 36 different digital displays. The system can be configured in multiples of 6 using the 6x6 input and output modules.

Any input source whether it is a HD-DVD player, Blue-Ray player or a computer with high-resolution graphics, can be routed to DVI and HDMI output digital display.

Note) SDI is not a licensed HDCP interface and if the content received from HDMI is protected by HDCP, there should be no output from the SDI slot.

This manual helps you to easily and quickly setup and operate your OMM2000 modular matrix router.

The key features are:

- Up to thirty-six (36) **DVI/HDMI/HD-SDI** inputs and outputs can install to mainframe as slot board.
- Any input source can be routed to DVI and HDMI output slot board without limitation.
- HDCP Compliance
- Each slot has (6) inputs/outputs and consists of (6) slot in each section of input & output.
- Up to WUXGA (1,900x1,200) pixel resolution at 60Hz refresh ratio, 1080P at 60Hz having 1.65Gbps transmission bandwidth.
- Dynamic EDID management – adapts to overall power management of the system
 - ✧ Restores the default EDID to Input port
 - ✧ Reads EDID from display and stores EDID to Input port via EEPROM
- Long distance extension of DVI/HDMI/HD-SDI input and output by Optical DVI/HDMI/HD-SDI cables or modules.
- Various Control Interfaces:
 - ✧ Front touch screen
 - ✧ Input commands through RS232, LAN
 - ✧ Graphical user interface using Ethernet and Proprietary PC software in the shipped system
- Modular, multi-plane chassis design supports multiple, independent switchers in any configuration.
- Router ID setting for differentiating multiple use of OMM2000 modular matrix router over RS232 connection.
- IP setting for Ethernet – point-to-point and local network control.

The shipping group consists of the followings:



- OMM2000 Modular Matrix Chassis: 1 EA
- OMDI DVI input Module w/Audio Connectors: 6EA
- OMDO DVI Output Module w/Audio Connectors: 6EA
- Hard carrying case: 1 EA:
- AC power cord: 1 EA
- User Manual: 1 EA
- Firmware download cable: 1 EA
- PC control software CD (CD storing PC control software): 1 EA
- RS-232 cable (crossed type): 1 EA
- RJ-45 UTP cable (crossed type): 1 EA: 1 EA

Ordering Information

- ☐ OMM2000: Modular Matrix Chassis (Does not include port modules)
- ☐ OMDI: DVI input Module w/Audio Connectors
- ☐ OMDO: DVI Output Module w/Audio Connectors
- ☐ OMHI: HDMI Input Module
- ☐ OMHO: HDMI Output Module
- ☐ OMSI: HD-SDI Input Module
- ☐ OMSO: HD-SDI Output Module

1.1 Notices for Safe Usage

We recommended you to read through following warning, precaution and information's without fail before attempting to operate the OMM2000 modular matrix router.

- Use of the equipment in a manner not specified by the manufacturer may result in ire-coverable damage.
- Use the assigned power cord or power adaptor shipped with the system.
- Connect the power cord to the normal and safe outlet.
- Keep the unit away from liquid, magnetic and combustible substances.
- Do not place heavy weight on the unit.
- Move away from noisy environment such as vibration or impact.
- Do not install the unit vertically.
- Do not disassemble the unit.

1.2 Physical Description

The OMM2000 modular matrix router chassis is mountable on a 19" standard rack. Touch screen and power switch are placed on the front panel as shown in Figure 1-1.

- Control touch screen: Fully system control as below list:①
 - ✧ **Channel creates** - Start updating or configuring input-output channel.
 - ✧ **Detect**- Show current status of input-output configuration.
 - ✧ **Unlink** – Disconnect the in-out channel configuration.
 - ✧ **K/B Control** - Accept data inputs and complete configuring input-output and other interface setup using front touch K/B (Keyboard)
 - ✧ **Communication and Function setup**- Configure Ethernet, RS-232 and set EDID.
- Power ON/OFF switch:②
- Reset button – Restart: Push with a needle pen:③
- Hand Grip:④
- USB type A port: Save and call the image pattern using USB interface:⑤
- Lock button(lock/unlock): Locking the front touch screen:⑥
- Back light button: Back light on/off button for protecting the LCD panel:⑦

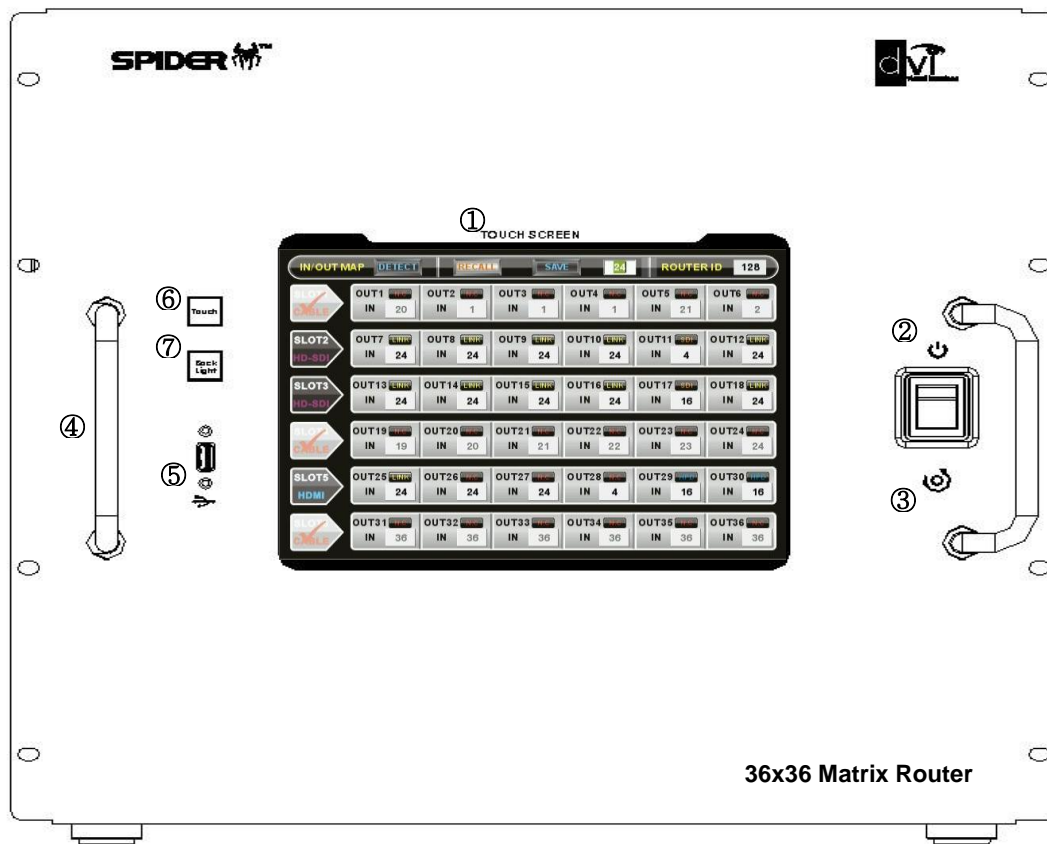


Figure 1-1 Front Panel of OMM2000 modular matrix router

All Input/output slot boards, interface ports and power connections are placed on the rear panel as follows;

- Six(6) slot board and thirty-six (36) single link with HDCP DVI inputs - female type: ①
- Six(6) slot board and thirty-six (36) single link with HDCP DVI outputs - female type: ②
- RS-232 Serial port - selectable of baud rates: ③
- 10/100 Base Ethernet Port: ④
- Reference video port: It generate the video and audio source for test purpose:⑤
- AC power receptacle: ⑥

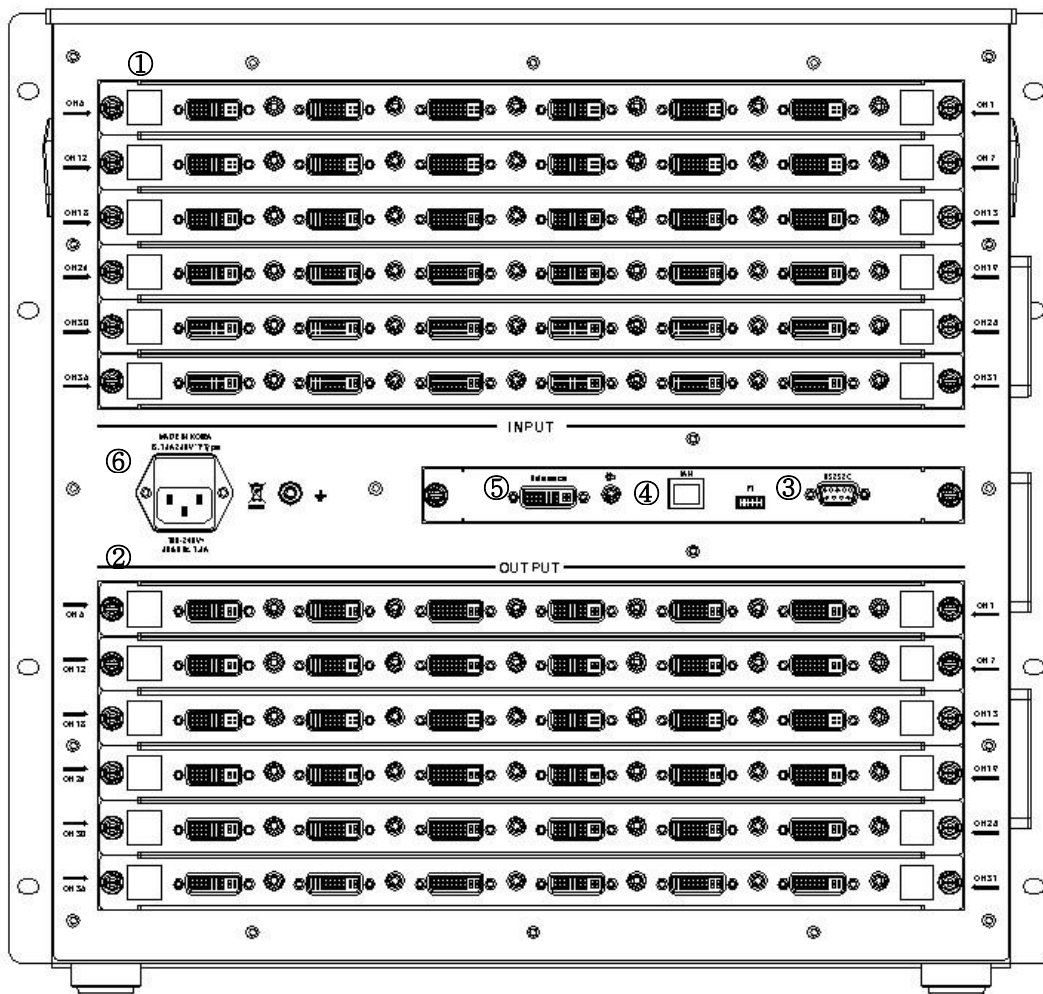


Figure 1-2 Rear Panel of OMM2000 modular matrix router

1.3 Installation

● Initializing OMM2000 modular matrix router and Installation Guide

Step 1 – Rack mount (10U)

Before installing cables, the OMM2000 modular matrix router has to be mounted on the rack. On both front faces of the side chassis are four holes tapped to screw L-shape plates to the rack.

Step 2 – Plug Power

Plug the provided AC power cord to AC power connector on the rear panel. Push **POWER** button on the front panel then you could see the initial image and loading message. Finally display will show the map of input

Step 3 – Connect Input sources

Connect inputs from your systems (Graphic card, Projector, Video etc.)

Step 4 – Connect output displays

Connect video and audio outputs to display device (LCD, monitor, projector etc.)

Step 5 – Connect control device

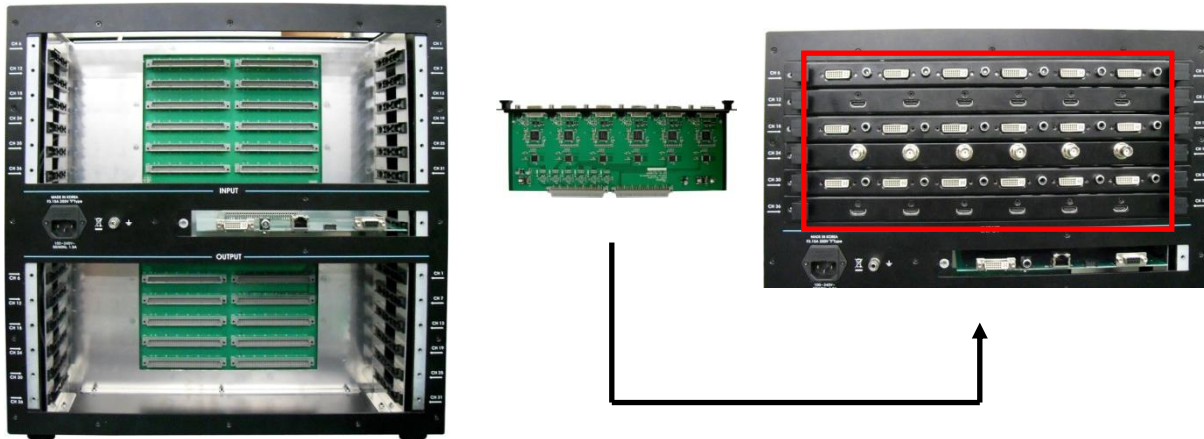
Commands and functions of OMM2000 are transferred through the RS-232 and Ethernet connection. USB connection is only valid with pattern control or firmware download function contained in the front control system.



Figure 1-3 Communication ports

- RS-232 Control
 - Connect the OMM2000 to a video controller or PC with the supplied RS-232 cable.
- Ethernet Control
 - Connect the OMM2000 to a video controller or PC with the RJ-45 connector/cable.
- Direct connection of PC or video controller to the OMM2000: Use a crossover Ethernet cable.
 - Typically, a PC is connected to the network and configured for dynamic IP address by a network DHCP server.
 - If the PC is connected directly to the OMM2000, the network server will not be able to address the PC.
 - In this case, the PC should be manually set in a static IP address. Refer to Setting the PC IP address in Chp. 3.1.1.
- LAN connection of OMM2000: Direct Ethernet connection.
 - OMM2000 is configured at the factory with the default IP address of 192.168.0.88. Before connecting to your network, verify the IP address on your network.
 - The IP address can be reconfigured by front key buttons or command lines over RS 232, Ethernet and USB.

- **Matrix Board Removal and Replacement**



- Step 1 – New slot installation
 - Turn off the main power and disconnect the cables from the slot board.
- Step 2 – Slot remove
 - Loosen the screws retaining the matrix board and remove it from the main frame.
- Step 3 – Slot insert
 - Slide in the new matrix board. Make sure that the new board is fully seated.
 - Tighten the screws just until snug against the main frame.
- Step 4 – System restart
 - Reinitialize the OMM2000 modular matrix router main frame. It will be necessary to power cycle the frame in order for the internal controller to auto-recognize the newly installed matrix board.

1.4 EDID Control and Configuration

- EDID (Extended Display Identification Data) is an information set that is provided by a display to describe its capabilities to a graphic source. It enables a graphic source to identify the connected display.
- The information set includes: manufacturer, product type, phosphor or filter type, timings supported by the display, display size, luminance data and (for digital displays only) pixel mapping data.
- Once the graphic source reads the information set (usually during the booting process), the EDID determines the optimal format for a connected display.
- OMM2000 supports storing of EDID information to an EEPROM for each Input by dedicated PC software.
- OMM2000 has two-way EDID settings, default EDID from factory and direct readout of stored EDID of any target display. The default EDID setting from the factory is 1080p (1920 x 1080) @ 60Hz for all inputs.

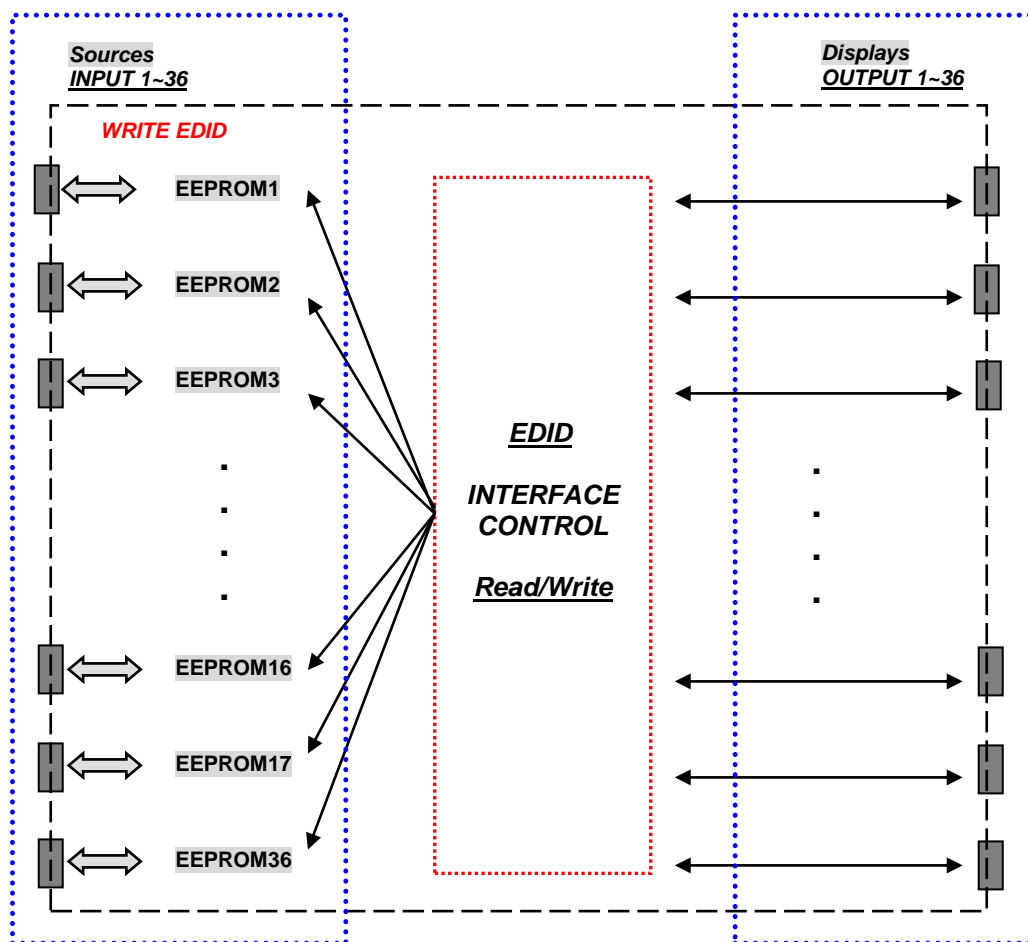


Figure 1-4 Concept drawing of EDID setting and working in OMM2000 modular matrix router

As depicted in Figure 1-4, once EDID is configured, each EDID is stored in EEPROM at the Input. As a result, the video sources are able to read EDID from the EEPROM during boot-up; even though the OMM2000 and connected displays are not powered on yet.

CHAPTER 2 FRONT PANEL OPERATION

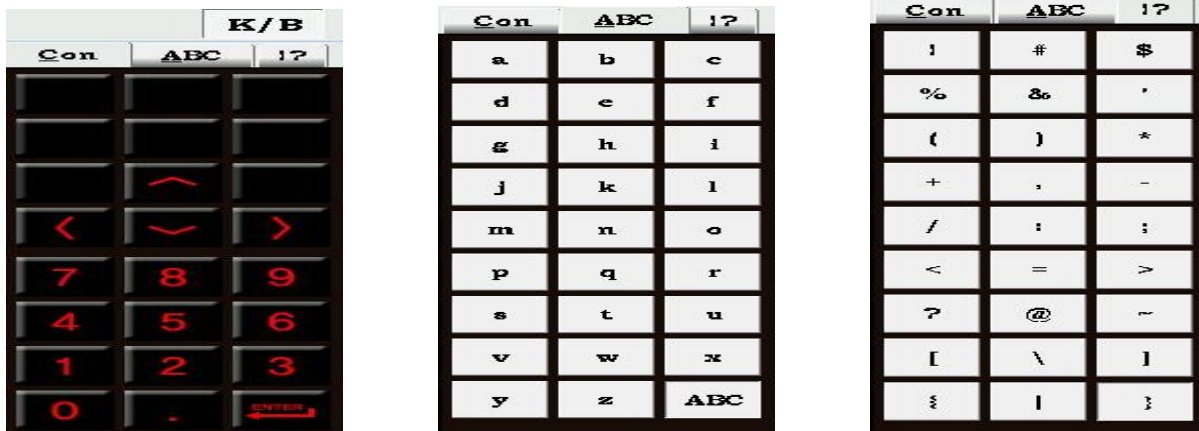
The front touch screen panel of OMM2000 modular matrix router is consisting and control as (4) sections that is configuration, EDID, System, Pattern and K/B (Keyboard) and each function are follows:



Figure 1-5 Main tab of front touch screen

- ① Configuration: Channel creates, channels unlink, channel detect.
- ② EDID: Direct readout from connected displays and Write EDID data to installed EEPROM at input port for user set.
- ③ System: Router ID, IP configuration, Serial Configuration, Password configuration, Buzzer function, Firmware update, Signal generator configuration, Calibrate Configuration
- ④ Pattern: OMM2000 modular matrix router has video source slot in rear panel. User can control it as pattern section on front screen.
- ⑤ KEY BOARD (K/B)

K/B image (Key board)



*Con	Control keys: Number, Enter, Direction keys
*ABC	Alphabet capital / small letter (push ABC button)
*?	Special characters

Figure 1-6 Keyboard (K/B) panel

2.1 Setting Router ID

If you have multiple routers of OMM2000 modular matrix router with a video controller or PC for control, at first each OMM2000 modular matrix router should be identified with Router ID setting, located on the front touch screen marked as Router ID [0~255] in **SYS** Section. It is able to set in a range of 000 to 255 using K/B (Keyboard) located at system configuration section in upper tab. The factory default setting is **255**.

Example Setting



Figure 1-7 Main tab in configuration

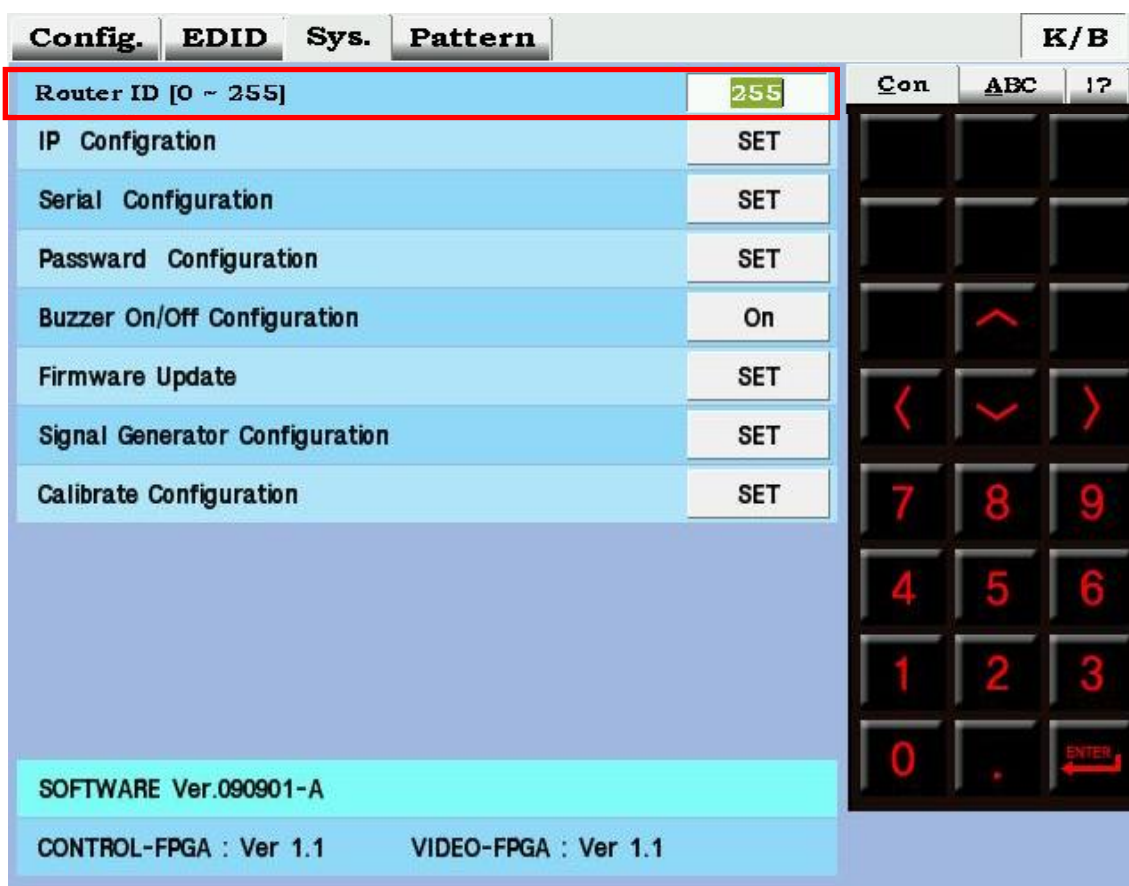


Figure 1-8 Router ID setting

- ◆ Click Sys. > Router ID square box> Key in any 3-digit number using K/B> Push enter button on K/B

2.2 Channel Creates

- Fully touch screen

Without connection of any Video controller or control PC, all communications with the OMM2000 modular matrix router are able to work with the front touch screen inputs.

- ◆ Channel Creates

It enables to configure connection of inputs and outputs to be cross-switched as you wish.

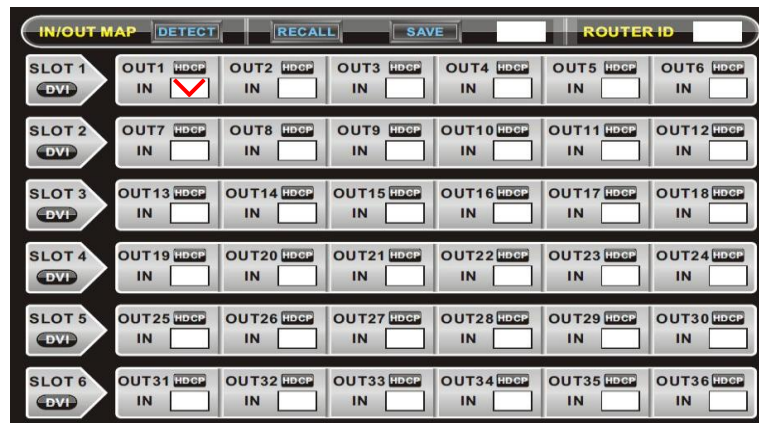


Figure 1-9 Channel configurations screen

At first push input square button(✓) to activate the slot window, and then you could see the slot setup window like below,

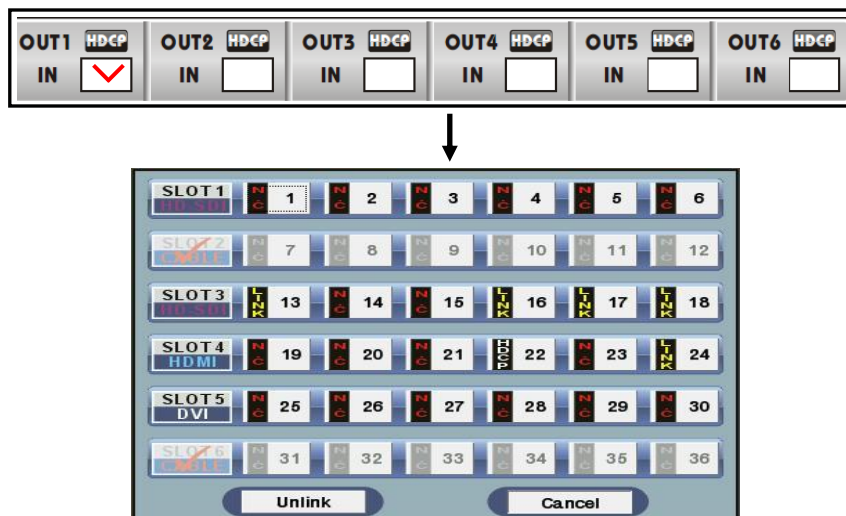
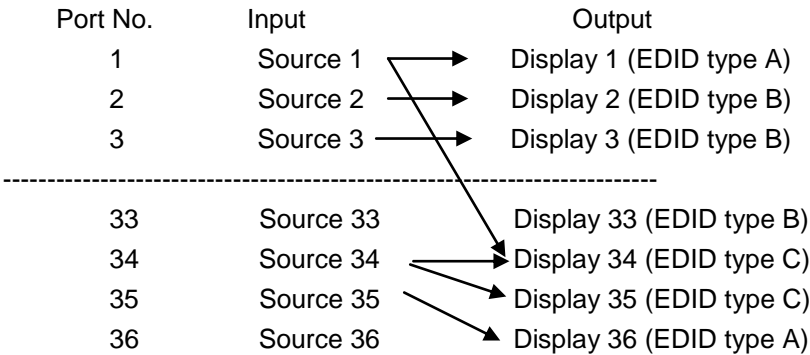


Figure 1-10 Channel create

Figure 1-10, push one of any input buttons to make input channel select and then you can see the changed number in Figure 1-9 Channel configurations screen and new channel

connection is created. Output channel is fixed so user can select the input channel using this process.

For example, if you have thirty-six displays with three different types of EDID to be set and want to configure connection of inputs and outputs like below:



The input-output configuration drawing arrows represents connecting as below;

- Input 1 to Output 1 and 15,
- Input 2 to Output 2,
- Input 3 to Output 3,
- Input 4 to Output 5,
- Input 33 no connection
- Input 34 to Outputs 34 and 35,
- Input 35 to Output 35, and
- Input 36 no connection

Operation has to be executed in two steps. The first is EDID setting, which has each EDID data of displays stored into EEPROM at each input front as configured in the above. The last is Input-Output Configuring, to make cross-switch as configured in the above.

2.2.1 Detect Mode

It shows current configuration of in-out match as push the 'DETECT' button in main screen.



Figure 1-10 Current button in main menu

Push the 'DETECT' button to show in in-out connection diagram on the front screen display. It makes back to the previous in-out channel data when you calling the saved in-out list or other working for processing.

This makes it back to the previous in-out channel data when you calling the saved in-out list or other working for processing.

2.3 Channel Unlink Mode

It enables cancel the configuration of inputs for each output. Push UNLINK button and then show the Unlink window on the front screen. Now, push an input button to be canceled and then light the selected input in Green and its configured outputs in Red. Pushing **ENTER** button makes complete the process.

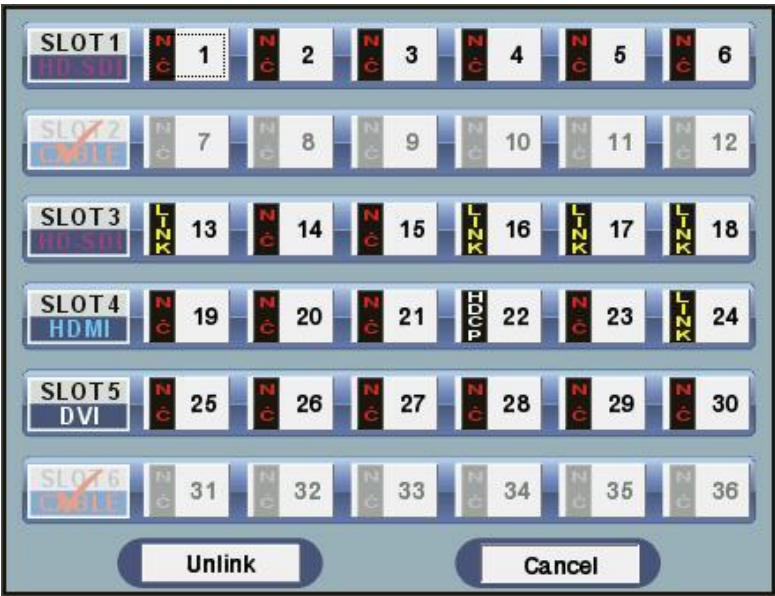


Figure 1-11 Channel unlink window

2.4 Channel saves and calls

- **SAVE:** It saves configuration of in-out data at control memory.

- When user edits or setup the channel data, it can be save at memory using save button.
- Set up the in-out channel and push save button
- Enter the number in square box and push the ENTER button using K/B.
- Please using K/B for enters the number. (K/B which is locate at right side of tap)

*Click Config. > > Point to ' ✓ ' square box > Click K/B button > Key in any 2-digit number less than digit (98) using K/B> Push enter button on K/B.



Figure 1-12 Tap of Channel saves

- **RECALL:** It fetches stored configuration in-out data from memory.

- f you have saved channel data, it can be recall using RECALL section
- Push the RECALL button and Enter the number in square box and push the ENTER button using K/B which is locate at right side of tap
- When you push the RECALL button and enter the number at square box, the current in-out data will show in channel statue box.

*Click Config. > Push RECALL button > Point to ' ✓ ' square box > Click K/B button > Key in any 2-digit number less than digit (98) using K/B> Push enter button on K/B.



Figure 1-13 Tap of Channel recall

CHAPTER 3 SYSTEM (Sys.) CONFIGURATION

The OMM2000 modular matrix router can be controller in various ways by using either a RS-232 connection, web browser, USB, Ethernet or manually by the large touch panel display located on the front of the unit. The unit is easily controlled by basic commands, or by a variety of industry standard video controllers products.

The system section of OMM2000 modular matrix router matrix router is consisting and control of (8) eight contents that is Router ID, IP configuration, Serial Configuration, Password configuration, Buzzer function, Firmware update, Signal generator configuration, Calibrate Configuration and each communication configuration contents are follows:

3.1 Ethernet Setting

3.1.1 SETTING THE IP ADDRESS of the PC

- If the PC is connected to the OMM2000 through the 10/100 Base Ethernet port, a static address should be configured on the PC:
 - ① Use Ethernet crossover cable (provided with OMM2000 system) for point-to-point direct connection between PC or controller and OMM2000 or use Ethernet strait cable to connect OMM2000 on LAN.
 - ② From the PC: Select Start menu, select Control Panel.
 - ③ In the Control Panel, select Network Connections.
 - ④ In Network Connections, right click on Local Area Connection and select Properties tab.

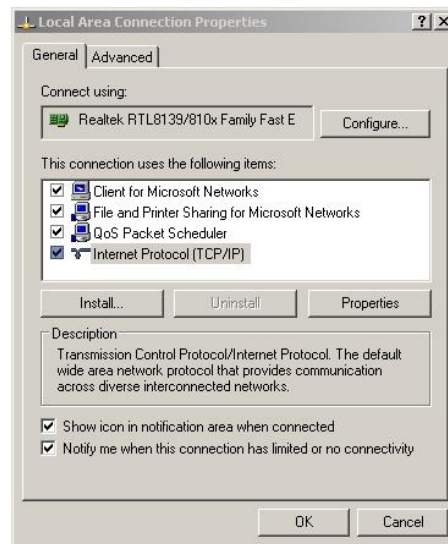


Figure 2-7 Local Area Network Properties

Select **Internet Protocol (TCP/IP)** and click on **Properties**.

In the Internet Protocol (TCP/IP) Properties, click Use the following IP address radio button.

Enter IP address compatible with the current IP address of the OMM2000.

For point-to-point direct connection, if the IP address of OMM2000 is 192.168.000.088, the PC IP address should be chosen as 192.168.000.nnn; where nnn ranges 000 to 255 except 088. (Refer to Chap. 3.1.2)

For LAN connection, maintain existing PC IP address then consult you network manager to obtain available IP address for OMM2000

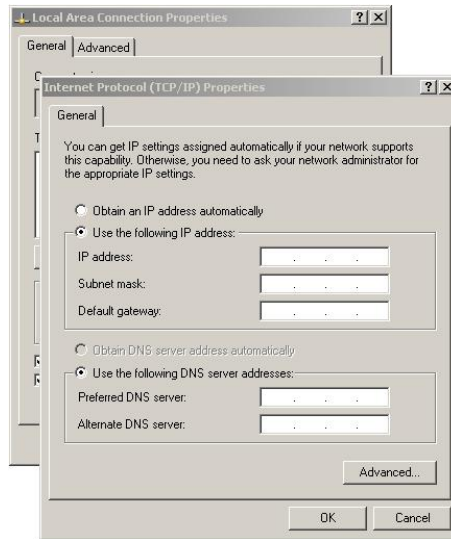


Figure 2-8 PC IP address setting

- ⑤ Select OK to terminate IP setup session.

3.1.2 IP Configuration

In initial main screen, move to the 'SYS' tap and push the **SET** button of IP Configuration using front touch screen.

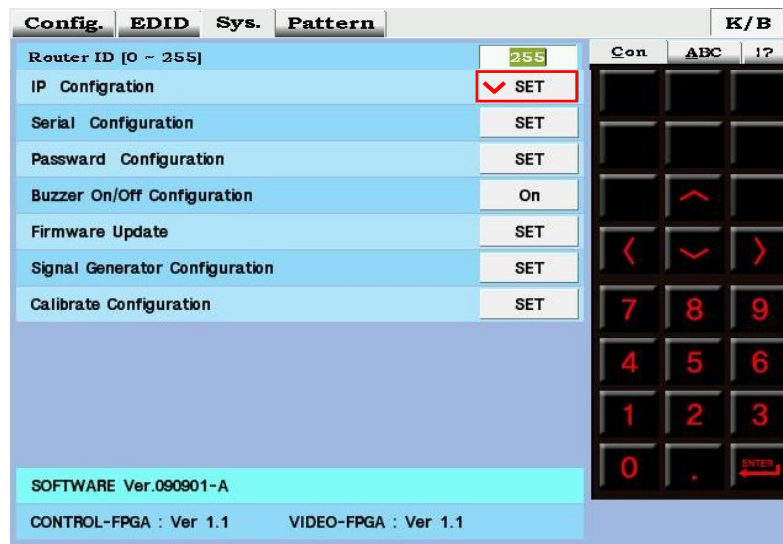


Figure 1-13 System configuration windows

User can see the detail configuration windows as follows:

Figure 1-15 Communication Configuration window

OMM2000 modular matrix router can be controlled through the 10/100 base Ethernet port using either graphic user interfaces or a command line interface. The graphic user interfaces use both of a standard web browser such as Microsoft Internet Explorer and a proprietary PC software. The physical connection of OMM2000 modular matrix router can be made on the standard LAN or directly in the peer-to-peer way. The command line interface uses a Telnet session to a private port.

To make OMM2000 modular matrix router connects through the Ethernet port, it should be set to have a unique, static IP address. The default IP from factory is **192.168.000.088**. To acquire a valid IP in your LAN network, contact your network manager to avoid IP conflict

There are (3) three sections for set the Ethernet, which is IP setting, Port setting, and Network Info. Enter the data using right side of '④'key-pad (0~9, A~F) .and push save button to save & exit.

- ① IP Setting: Select DHCP or Static IP.
- ② Network Info: Set the IP address, Net mask, Gateway, DNS.
- ③ Port Setting: Configuration of the port number.
 - ◆ Default Value (factory data) Information
 - IP address: 192. 168. 000. 088
 - Net Mask: 255. 255. 255. 000
 - Gateway: 192.168.000.001
 - Mac address: OMM2000 modular matrix router has its own MAC ADDRESS and that MAC ADDRESS allow you to communicate with PC network solutions without any communication jamming and it is storing in 'SYS>IP Configuration>IP Setting>Static IP' like figure 1-15.
 - Port Number: 03000 are preset in factory.

3.2 Serial Communication

3.2.1 RS 232C BAUD RATE

In initial main screen, move to the 'SYS' tap and push the **SET** button of Serial Configuration using front touch screen.

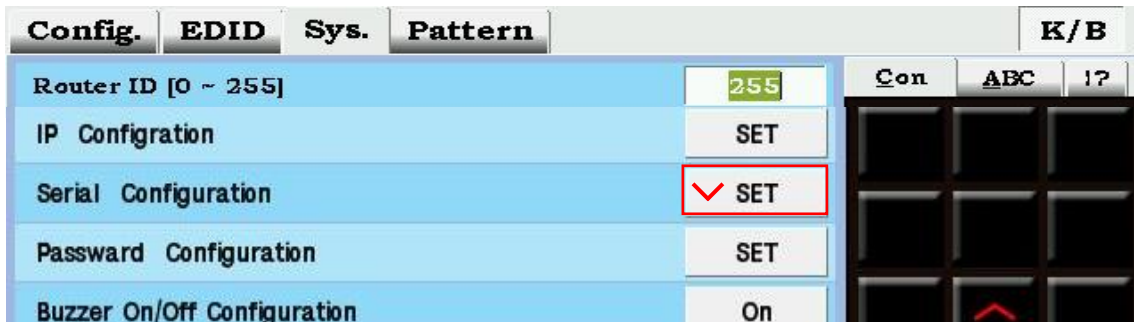


Figure 1-16 System configuration windows

User can see the detail configuration windows as follows:

Ex.) 1) Baud Rate=19,200 2) Data bits=8bit 3) Stop bits=1bit 4) Parity setting=Non

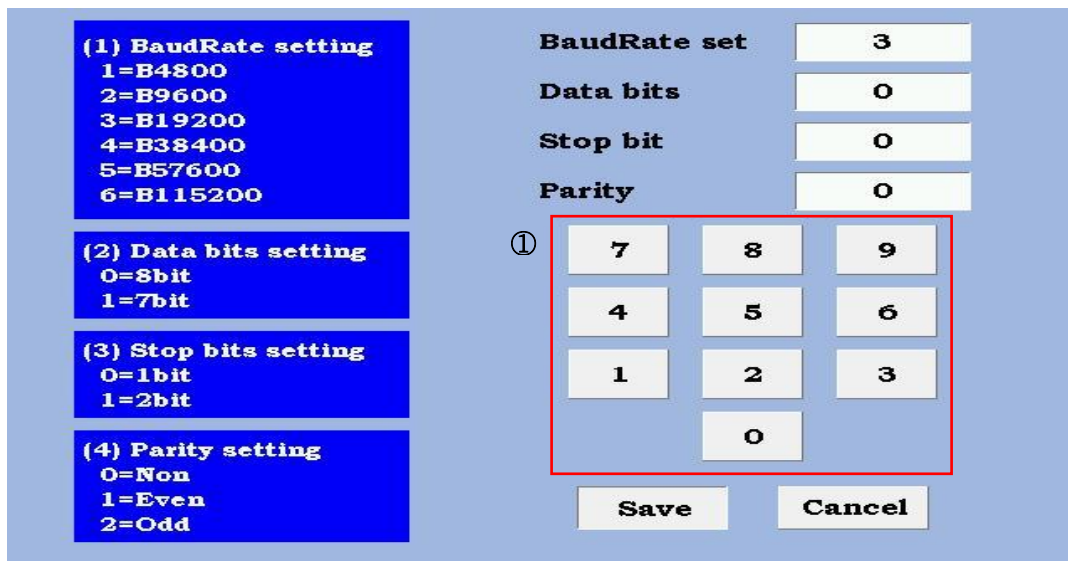


Figure 1-17 Serial configuration windows

There are (4) four sections to set of serial communication, which is Set the (1) Baud rate, (2) Data bits, (3) Stop bits, (4) Parity setting.

Enter the data using right side of '①'key-pad (0~9) .and push save button to save & exit.

If you want cancel this process, please push 'CANCEL' button for exit.

3.2.2 Launching HyperTerminal Window

The OMM2000 modular matrix router provides a command line interface being executed through the serial port, RS-232C.

Consider a PC running the Microsoft Windows operating system as a controller for OMM2000 modular matrix router. The PC is provided with serial emulation software so called as HyperTerminal. OMM2000 modular matrix router supports communication with this software in an efficient way.

Take the following procedure to make connection of a HyperTerminal window on PC ready.

- ① Connect the OMM2000 modular matrix router to a PC as described in section RS-232C Control on page 20.
- ② Click **Start > Programs > Accessories > Communications > HyperTerminal** to make executed.

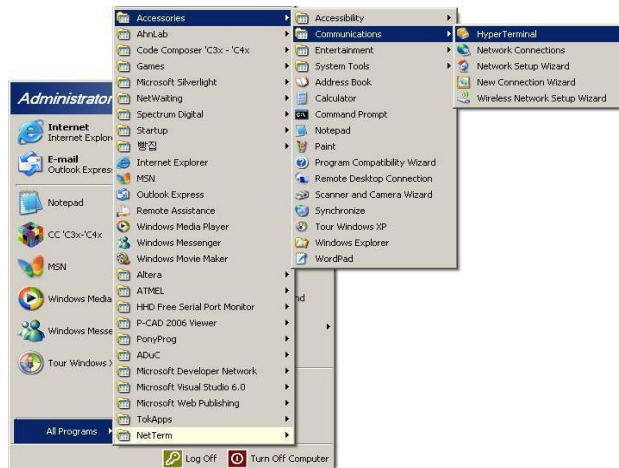


Figure 2-1 HyperTerminal Access

Running a HyperTerminal displays the **Connection Description Dialog**, as shown below.

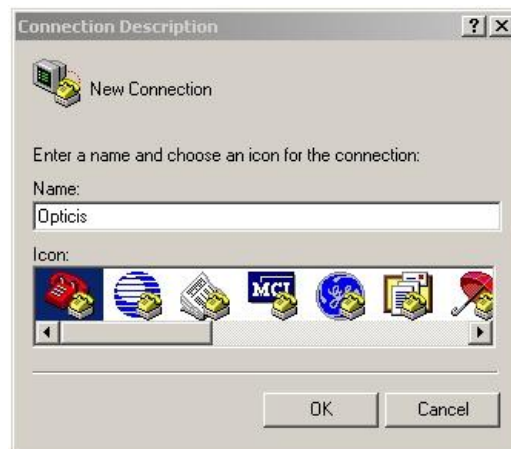


Figure 2-2 Connection Description Dialog

- ① In the dialog, enter a name and choose an icon. Clicking OK displays the **Connect To** dialog box.



Figure 2-3 Connect To Dialog

- ③ In the **Connect To** dialog box, ignore the **Country**, **Area Code** and **Phone Number** fields. In the **Connect Using** field, choose the available COM port to which the serial cable from OMM2000 modular matrix router is connected.
- ④ Click **OK** to show the **COM Properties** dialog box.

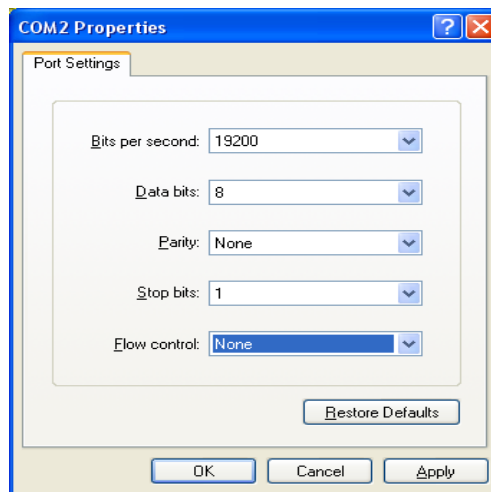
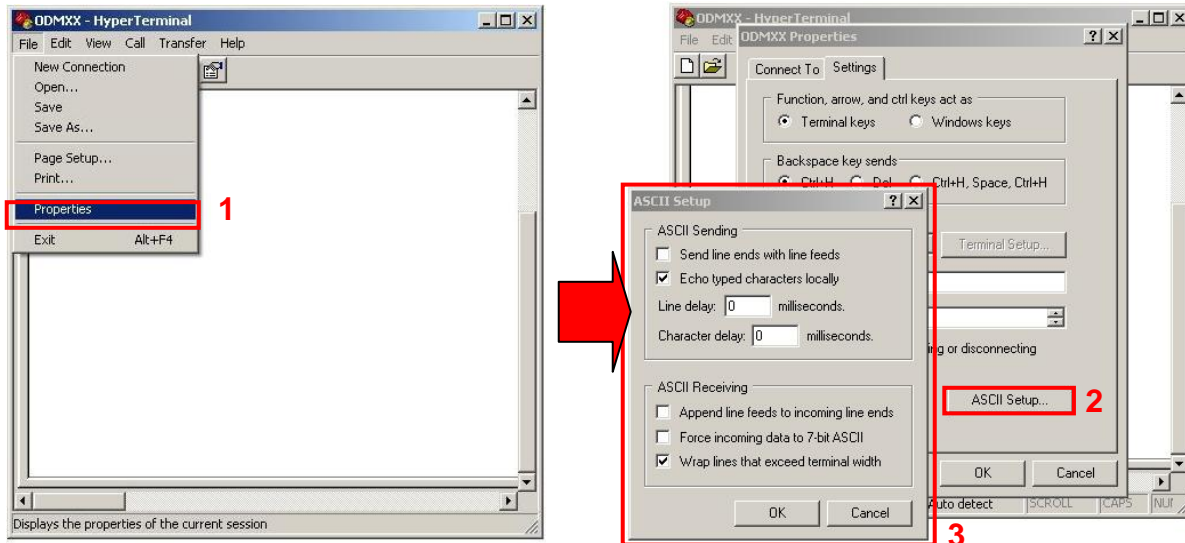


Figure 2-4 COM Properties Dialog

- ⑤ Configure the PC to the OMM2000 modular matrix router default settings as follows;
- A. Bits per second (baud rate): **19200** (recommended) or others
 - B. Data bits: **8**
 - C. Parity: **None**
 - D. Stop bits: **1**

- ⑥ Click **File > Property** and check like below red box. > Click OK to display the HyperTerminal window.



- ⑦ Send command set

3.2.3 Telnet

Telnet is a user command and an underlying TCP/IP protocol for accessing remote computers. Through Telnet, an administrator or another user can access someone else's computer remotely. On the Web, HTTP and FTP protocols allow you to request specific files from remote computers, but not to actually be logged on as a user of that computer. User should set the TCP/IP and port number before using a Telnet function.

TCP/IP

The Internet Protocol Suite (commonly known as TCP/IP) is the set of communications protocols in it: the Transmission Control Protocol (TCP) and the Internet Protocol (IP), which were the first two networking protocols defined in this standard.

- You could get the IP ADDRESS information from your network administer
To acquire a valid IP in your LAN network, contact your network manager to avoid IP conflict.

MAC ADDRESS

- OMM2000 modular matrix router has its own MAC ADDRESS and that MAC ADDRESS allow you to communicate with PC network solutions without any communication jamming.

PORT NUMBER

Telnet is a client-server protocol, based on a reliable connection-oriented transport. Typically this protocol is used to establish a connection to Transmission Control Protocol (TCP) port number 23, where a Telnet server application is listening.

- Telnet's port numbers are fixed as number 23.

LAUNCHING TELNET SESSION

With the IP address of the PC set above, a Telnet session can be started.

- 1) Select **Start** menu and select **Run**.
- 2) Type **command** as shown below.

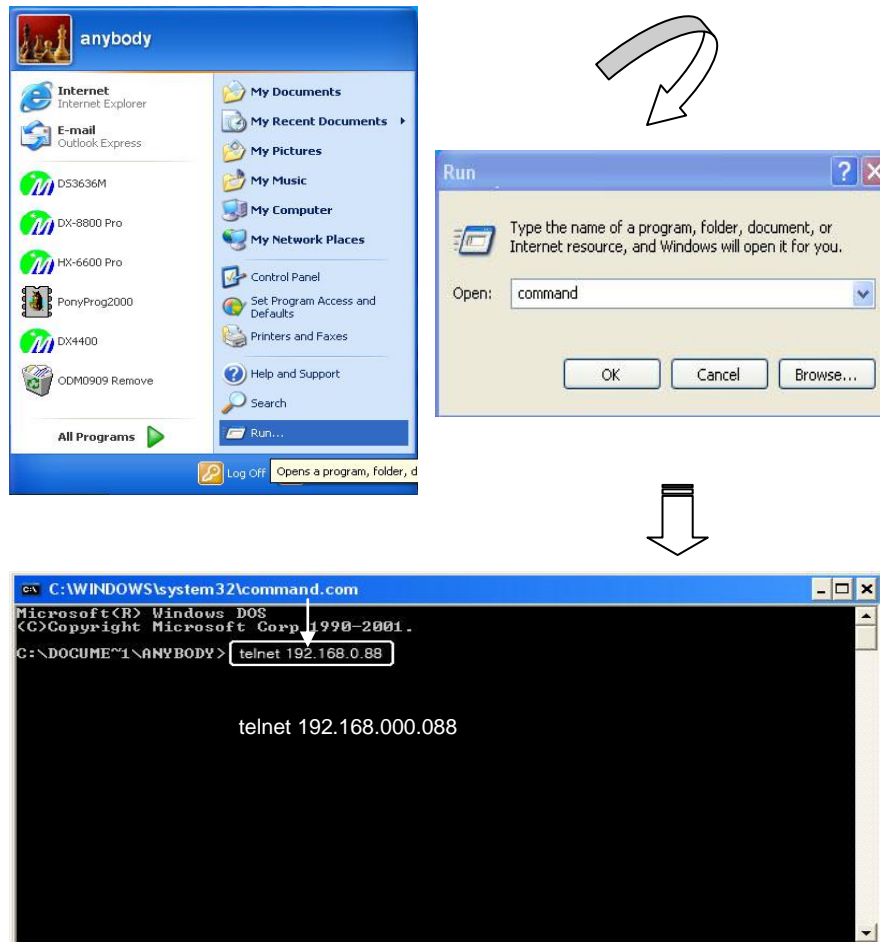


Figure 2-5 Run Windows

- 3) Select **OK** to open the command window.
- 4) Type the command: **telnet 192.168.0.88**
[Note] 192.168.0.88 is the default IP address of OMM2000. Change IP address as needed. (Refer to Chap. 2.6.6 and 2.8)
- 5) Press **ENTER**: "DVI Matrix Router Connected" will be displayed. Type serial command set. (Refer to Chap. 3.2)

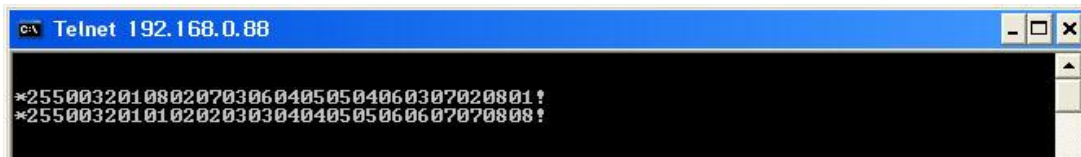


Figure 2-6 Telnet connected

3.3 Password Configuration

In initial main screen, move to the 'SYS' tap and push the SET button of password

- ◆ Initial password is '8880'

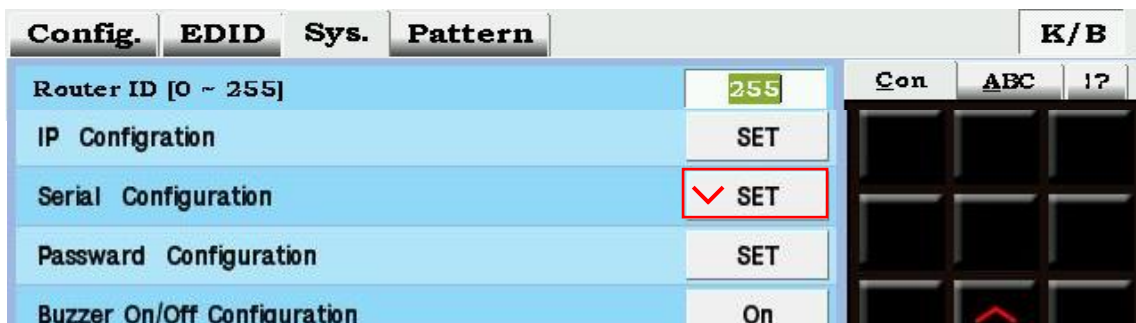


Figure 2-7 Password configurations

These functions for prohibit someone who accesses another user. Type the new password and retype new password using **NUM** keypad '①' like figure 2-8 and then press enter for complete changing.

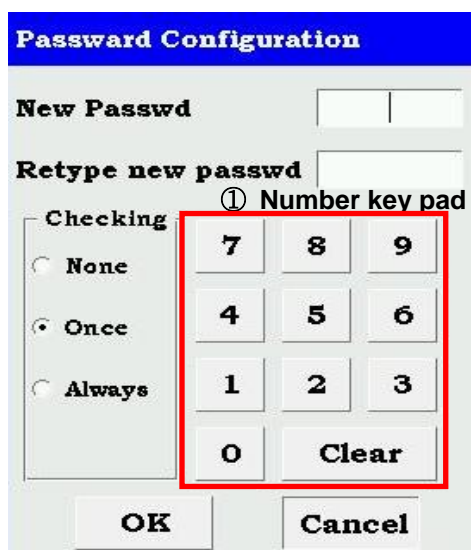


Figure 2-8 Password configurations detail

It has (3) three options to choose from, select (1) one option and push the ok button to save & exit.

✧ **Checking none**

: Does not check the Password.

✧ **Checking once**

: Checking password once and all

✧ **Checking always**

: Checking password every time

3.4 Buzzer On/Off Configuration

Buzzer On / Off

- Click Sys. > Push '✓' square box > Enter the password > Buzzer On.
- Click Sys. > Push '✓' square box > Enter the password > Buzzer Off

Config.	EDID	Sys.	Pattern		K/B
Router ID [0 ~ 255]		255		Con	ABC 1?
IP Configuration		SET			
Serial Configuration		SET			
Password Configuration		SET			
Buzzer On/Off Configuration		✓ On			
Firmware Update		SET			

Figure 2-9 Buzzer Configurations

3.5 Firmware Update

- Click Sys. > Push '✓' SET box > Enter the password > Select firmware files > Push OK button to downloading.

Config.	EDID	Sys.	Pattern		K/B
Router ID [0 ~ 255]		255		Con	ABC 1?
IP Configuration		SET			
Serial Configuration		SET			
Password Configuration		SET			
Buzzer On/Off Configuration		On			
Firmware Update		✓ SET			

Figure 2-10 Firmware Update

3.6 Signal Generator Configuration

OMM2000 modular matrix router has a reference video port for easy installation and it generates the Video and Audio signals.

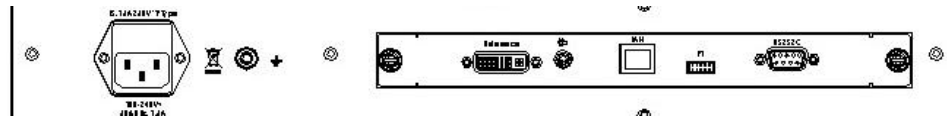


Figure 2-11 Video reference port

- Click Sys. > Push '✓' SET box > Enter the password

Config.	EDID	Sys.	Pattern	K/B
Router ID [0 ~ 255]	255			Con ABC 1?
IP Configuration	SET			
Serial Configuration	SET			
Password Configuration	SET			
Buzzer On/Off Configuration	On			
Firmware Update	SET			
Signal Generator Configuration	✓ SET			
Calibrate Configuration	SET			

Figure 2-12 Signal Generator Configuration

Video Setting

- Select time (Resolution) and click SET button
- Select Pattern (1~4) and click SET button

File Open & Exit

- Push file open
- Select the Audio or Video file and push OK button.

Video Setting	
Time	CEA 720x480 @ 60Hz SET
Pattern	Pattern 1 SET
File Open & Exit	
File Open	Exit

Figure 2-13 Video setting

3.7 Calibrate Configurations

This is screen control section for adjusting touch screen.
If touch screen is not pointing properly on the main screen, it may need to be calibrated.
Click Calibrate SET button and follow the instructions to calibrate the controller.

- Click Sys. > Push '✓' SET box > Enter the password

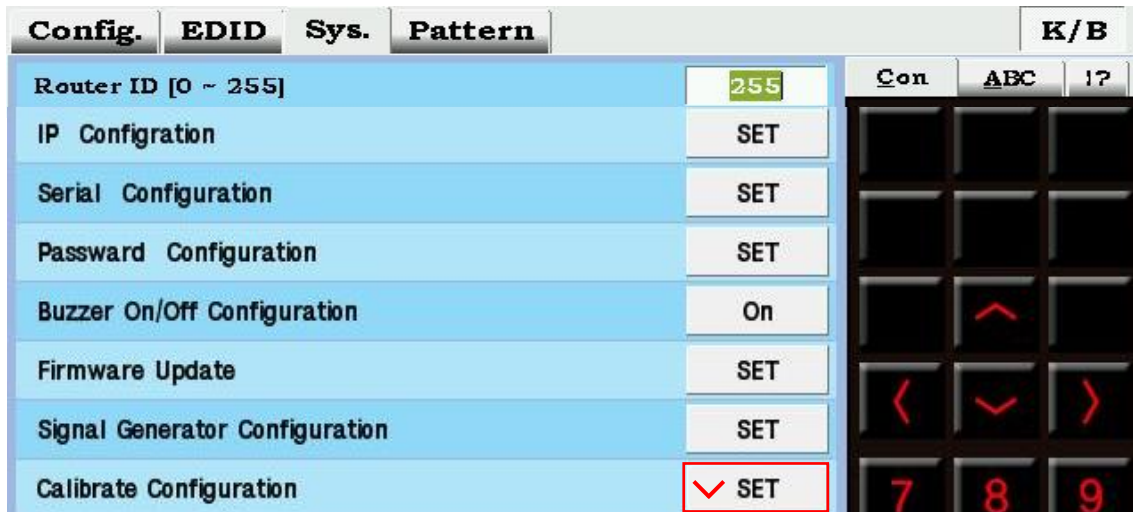
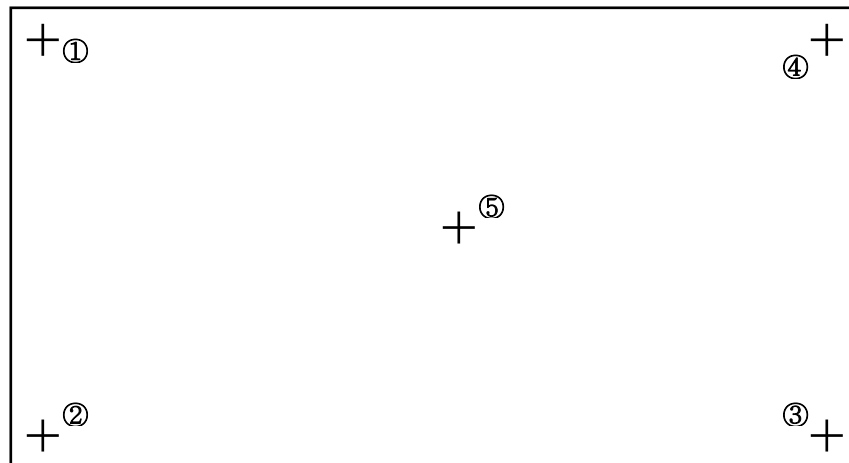


Figure 2-14 Calibrate Configuration

- Clicking on a SET button will bring up an adjustment window in the center pane like below;



- Clicking on a cross point at (10) ten times exactly.(1→2→3→4→5→1→2→3→4→5)
- If touch screen is pointing property, this process is finish and goes to system section.

CHAPTER 4 PATTERN BROWSER

Use Pattern Browser to play the image, editing system and link a variety of multimedia files including pattern and audio files.

You can also play the image using signal generator configuration in section 3.6.

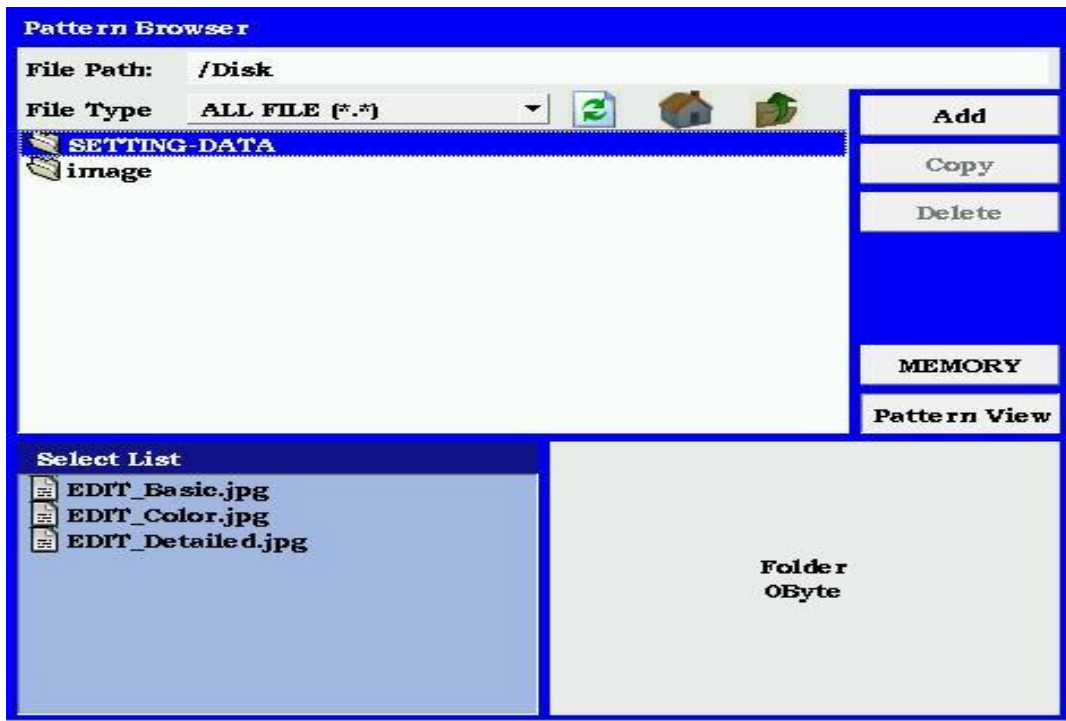


Figure 2-15 Pattern view

When you want to display Pattern Image file save in Personal USB

- Save Image on USB memory.
- Put USB memory in USB port of front panel.
- Pattern Browser will recognized new-USB port and show you Image folder.
- Double-click Image folder on touch panel and go to select image.
- Select image and confirm Pattern beforehand by click Pattern View key.
- You should have double-click specified Image again then press ENTER on Key Board if you want to output via Reference Video port in rear side of OMM2000.
- Selected Image will be output via Reference Video port.

Set-up guide as Factory Mode

- Move to Pattern section at initial window.
- You can find two files(LIST_SETTING DATA, SYSTEM_SETTING DATA) by double-click SETTING_DATA folder on Pattern Browser.
- Make sure left-bottom window set-up as Select List by press MEMORY key before moving files for delete.
- Click LIST_SETTING.DATA once and move to Select List by press Add key.
- Click SYSTEM_SETTING.DATA once and move to Select List by press Add key.
- Select list will contain delete expected 2files and you should have delete all files by click specified 1 file once then click Delete key.(2times)
- Make sure delete all files then re-boot.(Power Off/On)
- It will be set as initial setting.(factory mode)

Save Pattern Image

- User can save favorites Pattern Image List at default memory of OMM2000.
- Move to Pattern section on initial window.
- Change to Memory List at left-bottom of window by press MEMORY key.
- Find folder which has specified Pattern Image on Pattern Browser.
- Click specified Pattern image once and select wanted place on the Memory List(1-20).
- Save Memory List by press COPY at right-upper.
- User can save 20 images on default memory of OMM2000 and keep in mind the size can't be over 1024x768.

CHAPTER 5 COMMAND LINE OPERATIONS

■ Programmer's Guide

The OMM2000 modular matrix router could be operated in various interfaces, Front screen Inputs, communicating with command lines, graphic interfaces on web control panel (WCP) and proprietary PC software through RS 232C, Ethernet All functions are executed in a basis of command line interface, but graphic interfaces on the WCP or the PC software make more efficient to operate the OMM2000 modular matrix router.

Firmware and PC software are managed according to versions in release or upgrades and are shown how to upgrade in the firmware and software management in Appendix B.

5.1 Command line Operations

Command line interface is accomplished through RS-232C or Ethernet ports. Setting procedures for those ports are referred to SERIAL CONTROL and ETHERNET CONTROL.

The commands are coded in ASCII and HEXA. All descriptions are shown in Table 3.1. A command line constitutes of a string of ASCII or HEXA codes in a series as below;

Start (1 Byte) + **Router ID** (3 Bytes) + **Command** (1 Byte)
+ **Data Length** (3 Bytes)
+ **Output Number** (2 Bytes) + **Input Number** (2 Bytes)
+ **Output Number** (2 Bytes) + **Input Number** (2 Bytes) +.
+ **End** (1 Byte)

A command line allows executing only one command. Multiple commands require executing multiple strings having each command per a string.

All strings starts with **Start** byte.

To set **Router ID**, refer to 2.1 Setting Router ID(page12) of OMM2000 modular matrix router on page 10, to be selectable in a range of 000 to 255, written in 3 bytes.

Data Length represents the number of all bytes afterward it. And it is determined by the number of channels in which involved in the command line. **Input Ch Number** should follow **Output Ch Number**, which is designated in a pair.

A command line closes with **End** byte.

Table 3.1 Descriptions of Command Codes

Command Format		ASCII	HEX	Description	Byte
Start		*	0x2A	Header Code	1
Router ID		Variable	Variable	Router ID Value	3
Command	Create	0	0x30	Connects or disconnects the selected input and output channels	1
	Preview	1	0x31	Previews the connections of all channels	
	Cancel	2	0x32	Cancels the connection of selected channel	
	Upload Data Request	3	0x33	Upload the connections information to controller	
	Rolling	4	0x34	Rotates the input and output connection	
	Upload Router ID	5	0x35	Uploads the Router ID to controller	
	Rolling Stop	6	0x36	Stops the rolling command	
	Check Connection	7	0x37	Uploads the right or wrong Of all connections	
	Upload One Channel Data Request	8	0x38	Uploads the connection status of selected channel	
	Baud rate Setting	@	0x40	Changes Baud rate for RS-232	
	Read Output Device EDID	A	0x41	Reads EDID from attached display	
	Default EDID Setting	B	0x42	Restores factory set EDID on EEPROM	
	Read Input EEPROM EDID	C	0x43	Reads EDID from EEPROM	
	EDID Write	D	0x44	Reads EDID from display and writes to EEPROM	
	Edit EDID Write mode	E	0x45	Edits EDID Write mode	
	EDID Data	F	0x46	Send divided data by two	
	Monitoring	G	0x47	Sets the monitoring channel	
Data Length			Variable	-	3
Output Ch			Variable	Selected Output Ch	2
Input Ch			Variable	Selected Input Ch	2
End			0x21	Tail Code	1

As a response of command line input to OMM2000 modular matrix router, it returns any of the following ACK signals to the controller shown in Table 3.2 if it is not specified.

Table 3.2 Descriptions of Acknowledge (ACK) Signals

Acronym	Bytes	ASCII Codes	Description
Error	1	0x05	Router received the irregular data packet
RX Complete	1	0x06	Router received the regular data packet
Job Complete	1	0x07	Completed the operation per command
Connection OK	1	0xA0	Connection has been successfully done

After sending command codes, ACK will be returned.

If the command codes are successfully done, 0x06, 0x07 will be returned. But if it is failed, 0x05 will follow it by return. Some command codes have special ACK and it is described under the each example command code below.

The followings illustrate example codes for various applications to be utilized on HyperTerminal for RS-232 and on Telnet for TCP/IP.

CREATE COMMAND

Configure cross switching of inputs and outputs.

Command line format:

Start () + Router ID (3 byte) + Command (0) + Data Length (Variable) + Output channel (2 byte) + Input channel (2 byte) + ... + End (!)*

Ex. 1> One (1) channel connection of Output Ch1 and Input Ch1

	Start	Router ID			Command	Data Length			Output ch		Input ch		End
ASCII	*	0	0	0	0	0	0	4	0	1	0	1	!
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	31h	21h

Ex. 2> One (1) channel disconnection of Output Ch1 by setting "0" on the input channel bytes.

	Start	Router ID			Command	Data Length			Output ch		Input ch		End
ASCII	*	0	0	0	0	0	0	4	0	1	0	0	!
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	30h	21h

Ex. 3> Two (2) channels connection: Output Ch1 → Input Ch8 & Output Ch 8 → Input Ch1

	Start	Router ID			Command	Data Length			Output ch		Input ch	
ASCII	*	0	0	0	0	0	0	8	0	1	0	8
HEX	2Ah	30h	30h	30h	30h	30h	30h	34h	30h	31h	30h	38h

Output ch		Input ch		End
0	8	0	1	!
30h	38h	30h	31h	21h

Ex. 4> Thirty-six (36) channels direct –through connection

	Start	Router ID			Command	Data Length			Output ch		Input ch	
ASCII	*	0	0	0	0	1	4	4	0	1	0	1
HEX	2Ah	30h	30h	30h	30h	31h	34h	34h	30h	31h	30h	38h

Output Ch		Input Ch		...	Output Ch		Input Ch		Output Ch		Input Ch		END
0	2	0	2	...	3	5	3	5	3	6	3	6	!
30h	32h	30h	32h	...	33	35	33	35	33	36	33	36	21h

PREVIEW COMMAND

It shows configuration of all input-output match.

Command line format:

Start (*) + Router ID (3 byte) + Command (1) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	1	0	0	0	!
Hex	2Ah	30h	30h	30h	31h	30h	30h	30h	21h

CANCEL COMMAND

It enables to cancel the configuration of outputs for each input.

Command line format:

Start (*) + Router ID (3 byte) + Command (2) + Data Length (variable) + Input Channel (2 byte) + End (!)

Ex> Input channel 1 disconnection

Byte	Start	Router ID			Command	Data Length			Input Ch		End
ASCII	*	0	0	0	2	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	32h	30h	30h	32h	30h	31h	21h

UPLOAD DATA REQUEST

It enables to upload the connection data to the controller.

Command line format:

Start (*) + Router ID (3 byte) + Command (3) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	3	0	0	0	!
Hex	2Ah	30h	30h	30h	33h	30h	30h	30h	21h

Sending **Upload Data Request** command to router let OMM2000 modular matrix router respond **ACK** signal to controller in a format as follows;

0x06(06h) + Connection DATA + 0x07(07h)

The **Connection Data** represents the connection information of router

1) Connection Data of OMM2000 modular matrix router for a connection of 1-1, 2-2, 3-3, 4-4, 5-5, 6-6 ~ 35-35, 36-36

Byte	Start	Router ID			Command	Data Length			Output Ch		Input Ch	
ASCII	*	0	0	0	3	1	4	4	0	1	0	1
Hex	2Ah	30h	30h	30h	33h	31h	34h	34h	30h	31h	30h	31h

Output Ch		Input Ch		...	Output Ch		Input Ch		Output Ch		Input Ch		END
0	2	0	2	.....	3	5	3	5	3	6	3	6	!
30h	32h	30h	32h	.....	33h	35h	33h	35h	33h	36h	33h	36h	21h

ROLLING COMMAND: Rotates Input at fixed Output.

Checks connection status of all inputs and outputs by changing them in sequence.

Format of Command Line:

Start () + Router ID (3 byte) + Command (4) + Data Length (Variable) + Output Channel (2 byte) + Input Channel (2 byte) + ... + End (!)*

Example: To rotate three (3) inputs 1, 2, and 3 on three (3) outputs 1, 2, and 3.

1) Output Channel 1 → Input Channel 1, Output Channel 2 → Input Channel 2, Output Channel 3 → Input Channel 3

Byte	Start	Router ID			Command	Data Length			Output Channel		Input Channel	
ASCII	*	2	5	5	4	0	1	2	0	1	0	1
Hex	2Ah	32h	35h	35h	34h	30h	31h	32h	30h	31h	30h	31h

Output Channel		Input Channel		Output Channel		Input Channel		End
0	2	0	2	0	3	0	3	!
30h	32h	30h	32h	30h	33h	30h	33h	21h

2) Output Channel 1 → Input Channel 2, Output Channel 2 → Input Channel 3, Output Channel 3 → Input Channel 1

Byte	Start	Router ID			Command	Data Length			Output Channel		Input Channel	
ASCII	*	2	5	5	4	0	1	2	0	1	0	2
Hex	2Ah	32h	35h	35h	34h	30h	31h	32h	30h	31h	30h	32h

Output Channel		Input Channel		Output Channel		Input Channel		End
0	2	0	3	0	3	0	1	!
30h	32h	30h	33h	30h	33h	30h	31h	21h

3) Output Channel 1 → Input Channel 3, Output Channel 2 → Input Channel 1, Output Channel 3 → Input Channel 2

Byte	Start	Router ID			Command	Data Length			Output Channel		Input Channel	
ASCII	*	2	5	5	4	0	1	2	0	1	0	3
Hex	2Ah	32h	35h	35h	34h	30h	31h	32h	30h	31h	30h	33h

Output channel		Input channel		Output channel		Input channel		End
0	2	0	1	0	3	0	2	!
30h	32h	30h	31h	30h	33h	30h	32h	21h

UPLOAD ROUTER ID

It enables to upload Router ID to controllers or PC.

Command line format:

✧ Start (*) + Router ID (3 byte) + Command (5) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	5	0	0	0	!
Hex	2Ah	30h	30h	30h	35h	30h	30h	30h	21h

If the Router ID is 015, you will receive ACK signal as follow.

Byte	Start	Router ID			Command	End
ASCII	*	0	1	5	5	!
Hex	2Ah	30h	31h	35h	35h	21h

ROLLING STOP

It Stops the Rolling command.

Command line format:

Start (*) + Router ID (3 byte) + Command (6) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	6	0	0	0	!
Hex	2Ah	30h	30h	30h	36h	30h	30h	30h	21h

CHECK CONNECTION

It enables to check status of all connections.

Command line format:

Start (*) + Router ID (3 byte) + Command (7) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	7	0	0	0	!
Hex	2Ah	30h	30h	30h	37h	30h	30h	30h	21h

- By sending **Check Connection** command to the router, OMM2000 responds with the following **ACK** signal to controller:
- Good connection: **0xA0 (A0h)**
- Bad connection: **0x05 (05h)**

UPLOAD ONE CHANNEL DATA REQUEST

Upload connection status of a selected Output channel.

Command line format:

Start (*) + Router ID (3 byte) + Command (8) + Data Length (002) + Output channel (2 byte) + End (!)

In case of input 6 → output1 connection

Byte	Start	Router ID			Command	Data Length			Output Ch		End
ASCII	*	0	0	0	8	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	38h	30h	30h	32h	30h	31h	21h

The ACK signal would be

Byte	Start	Router ID			Command	Data Length			Input Ch		End
ASCII	*	0	0	0	8	0	0	2	0	6	!
Hex	2Ah	30h	30h	30h	38h	30h	30h	32h	30h	36h	21h

READ OUTPUT DEVICE EDID

Read EDID from connected display.

Command line format:

Start (*) + Router ID (3 byte) + Command (A) + Data Length (002) + Output channel (2 byte) + End (!)

Example: Read EDID from a Display connected to Output 1

Byte	Start	Router ID			Command	Data Length			Output ch		End
ASCII	*	0	0	0	A	0	0	2	0	1	!
Hex	2Ah	30h	30h	30h	41h	30h	30h	32h	30h	31h	21h

The ACK signal would be

Byte	Start	ID			Command	Data Length			Output Ch		EDID (256Byte)	End
ASCII	*	0	0	0	A	2	5	8	0	1	...	!
Hex	2Ah	30h	30h	30h	41h	32h	35h	38h	30h	31h	00h...xxh	21h

EDID (256Byte) contains output display 1 EDID information.

READ INPUT EEPROM EDID

Read EDID stored on EEPROM of an Input.

Format of Command Line:

Start () + Router ID (3 byte) + Command (C) + Data Length (002) + Input EEPROM (2 byte) + End (!)*

Ex.> Read EDID stored on EEPROM of Input 2

Byte	Start	Router ID			Command	Data Length			Input EEPROM		End
ASCII	*	0	0	0	C	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	43h	30h	30h	30h	30h	32h	21h

The ACK signal would be

Byte	Start	Router ID			Command	Data Length			Input EEPROM		EDID (256Byte)	End
ASCII	*	0	0	0	C	2	5	8	0	2	...	!
Hex	2Ah	30h	30h	30h	43h	32h	35h	38h	30h	31h	00h...xxh	21h

EDID (256Byte) contains EDID information, which was in EEPROM 2.

EDID WRITE

Read EDID information from connected displays and writes EDID to each EEPROM.

Format of Command Line:

✧ *Start (*) + Router ID (3 byte) + Command (D) + Data Length (Variable) + EEPROM 1 (2 byte) + EEPROM 2 (2 byte) + ... + End (!)*

- Variable in Data Length is determined by multiplying 2 bytes to the maximum number of Input channels. With OMM2000, it is 16 bytes, multiplying 2 bytes by 8 inputs.
- The 2 bytes in EEPROM # represents the Output port number of target display. For example, 03 in EEPROM 2 represents: load the EDID of Output 3 display into EEPROM 2. The value, 00 in EEPROM # represent: no updating to EEPROM.

Example: Sets, Output 1 display → Input 1 EEPROM; Output 3 display → Input 2 EEPROM

Byte	Start	Router ID			Command	Data Length			EEPROM 1		EEPROM 2	
ASCII	*	0	0	0	D	0	7	2	0	1	0	3
Hex	2Ah	30h	30h	30h	44h	30h	37h	32h	30h	31h	30h	33h

EEPROM 3		.....		EEPROM 35		EEPROM 36		END
0	0	...	...	0	0	0	0	!
30h	30h	...	...	30h	30h	30h	30h	21h

DEFAULT EDID SETTING

Restores factory default EDID on EEPROM.

Command line format:

Start (*) + Router ID (3 byte) + Command (B) + Data Length (000) + End (!)

Byte	Start	Router ID			Command	Data Length			End
ASCII	*	0	0	0	B	0	0	0	!
Hex	2Ah	30h	30h	30h	42h	30h	30h	30h	21h

BAUD RATE SETTING

Change baud rate through RS-232.

Command line format:

- ✧ Start (*) + Router ID (3 byte) + Command (@) + Data Length (002) + Baud Rate (variable) + End (!)
- ✧ The default baud rate is 19,200
- ✧ Baud rate options:
 - 01 for 19,200bps
 - 02 for 38,400bps
 - 03 for 57,600bps
 - 04 for 115,200bps

Ex.> Set the baud rate to 38,400bps.

Byte	Start	ID			Command	Data Length			Baud Rate		End
ASCII	*	0	0	0	@	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	40h	30h	30h	30h	30h	31h	21h

ACK is identical to command code for BAUD RATE SETTING

Byte	Start	ID			Command	Data Length			Baud Rate		End
------	-------	----	--	--	---------	-------------	--	--	-----------	--	-----

ASCII	*	0	0	0	@	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	40h	30h	30h	30h	30h	31h	21h

MONITORING

Sets monitoring channel.

Format of Command Line:

Start () + Router ID (3 byte) + Command (G) + Data Length (002) + Monitoring Data (2 byte) + End (!)*

Ex.> Sets Input ch 2 as a Monitoring channel

Byte	Start	ID			Command	Data Length			Monitoring Data		End
ASCII	*	0	0	0	G	0	0	2	0	2	!
Hex	2Ah	30h	30h	30h	47h	30h	30h	32h	30h	32h	21h

5.2 Web Control Panel Operation

The web control panel (WCP) provides a graphic alternative to command line interface.

The OMM2000 supports standard web browser. Microsoft Explorer is highly recommended.

Before running the web browser, confirm that Ethernet connection is setup properly (Refer to Chap. 3.1)

Run the web browser then enter IP address into the URL address line.

For example, if the IP address of OMM2000 is 192.168.000.088, type the following entry into the URL address line: **http://192.168.000.088**

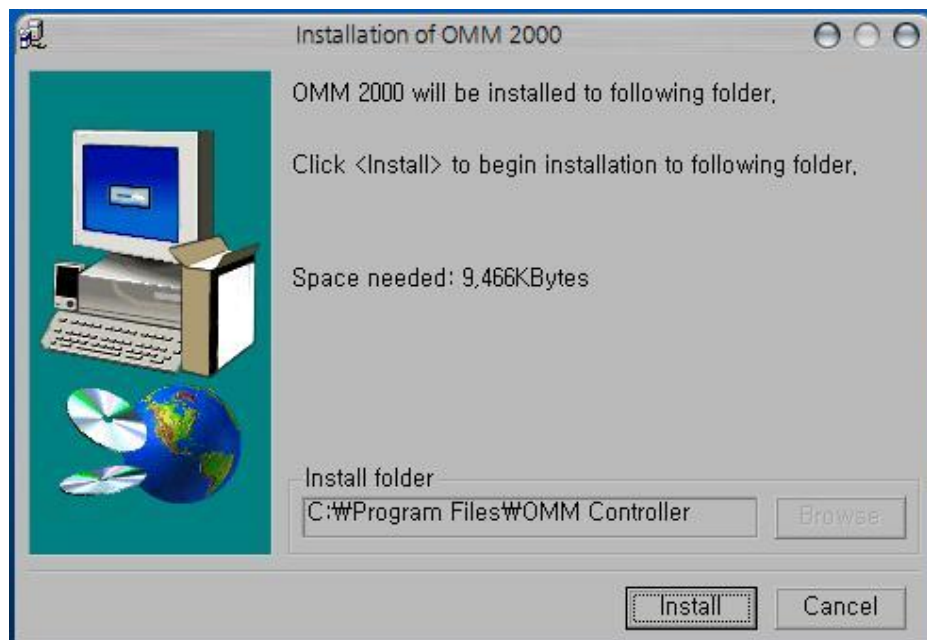
CHAPTER 6 PROPRIETARY PC SOFTWARE OPERATIONS

6.1 Installation of PC Program Application

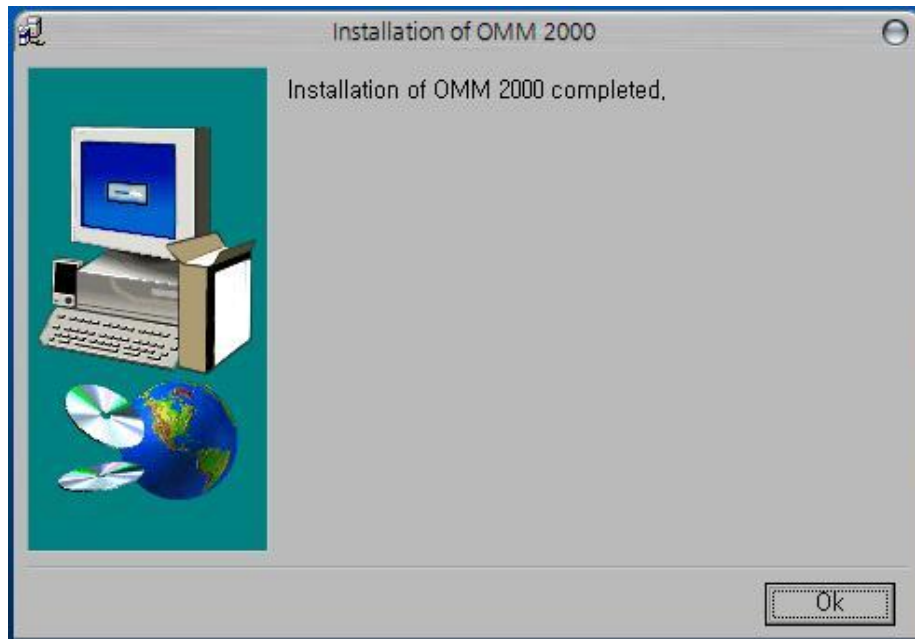
- ① Insert OMM2000 software CD ROM into PC. If the CD ROM does not automatically run, Select Start >Run. Enter X:\ 'OMM2000 -install.exe, (where X is the letter of your CD ROM drive)
- ② Installation of OMM2000 screen will be opened – select **NEXT**.



- ③ Select the destination directory path then select **Install**.



- ④ To complete the installation, select the **OK**.



- ⑤ Select **Yes** to update the registry.
- ⑥ Select the **OK** button.

6.2 Installation of USB Driver

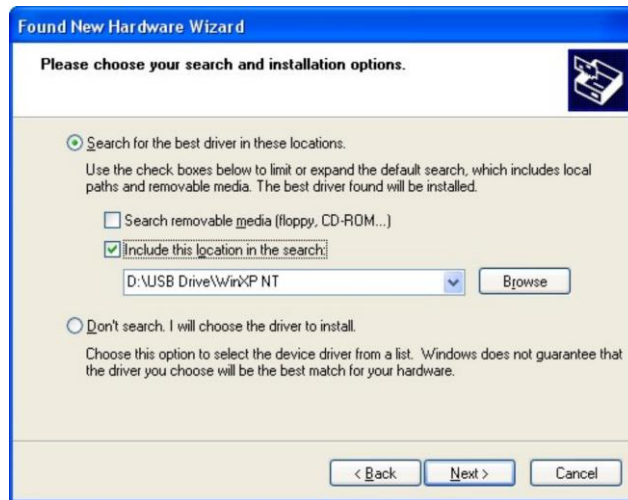
Windows XP

1. Connect OMM2000 to PC using USB cable then turn on OMM2000.
2. Select **"Install from a list or specific location (Advanced)"** then select **'NEXT'**.

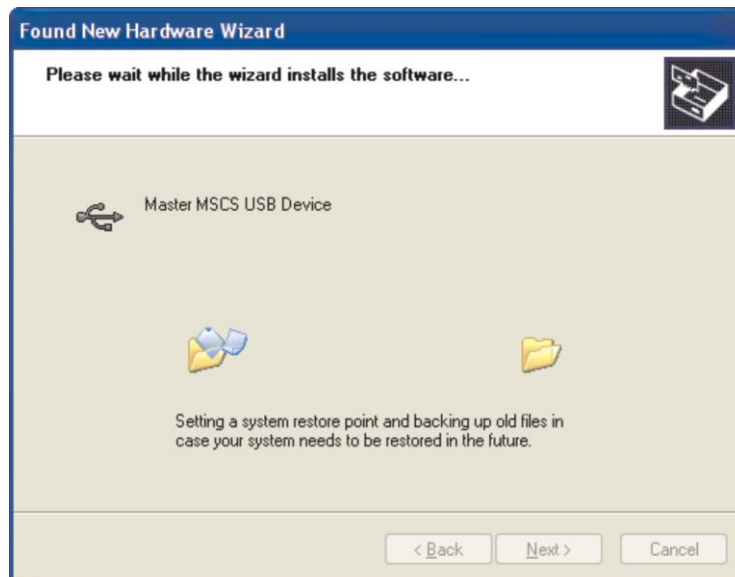


3. Insert CD ROM then select **Search for the best driver in these**

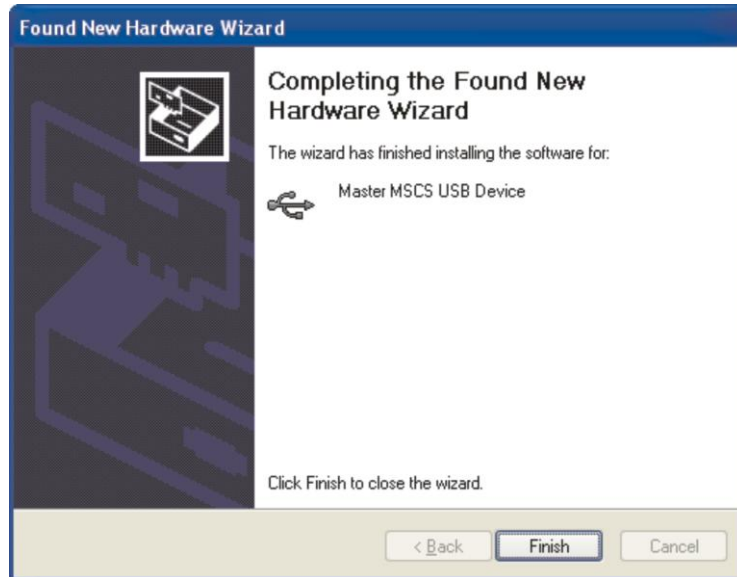
locations and **Include this location in the search** (CD ROM Drive\USB Drive\WinXP NT) then select **NEXT**



4. Select the **Continue Anyway** to proceed.



5. Select **FINISH** to complete installation.



6.3 PC Operation using RS-232

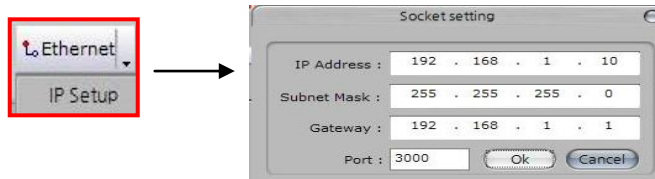
1. Run PC Application.
2. Check the communication cable (RS-232, LAN or USB) and turn on the router.
3. Double click the PC Application.
4. Set identical Router ID number on the PC Application and OMM2000 using the Dipswitch settings on the rear panel of router. (Default factory setting is 255)
5. Router will initialize and verify the connection status of communication cable.
6. Message 'connection is completed successfully' appears on status display area, and begins loading of switching-patterns from router.
7. If incorrect cable, COM port or Router ID is detected, message 'Device Not Found' will appear on the status display.
8. Verify that cable is securely connected then check COM port.
To check COM port, click right side of 'RS-232' button and make sure the COM port number and baud rate are set properly. Make necessary changes then click left side of RS-232 to initiate RS-232 connection again.

[Note] The default interface for PC Application is RS-232. See below instructions to use LAN.

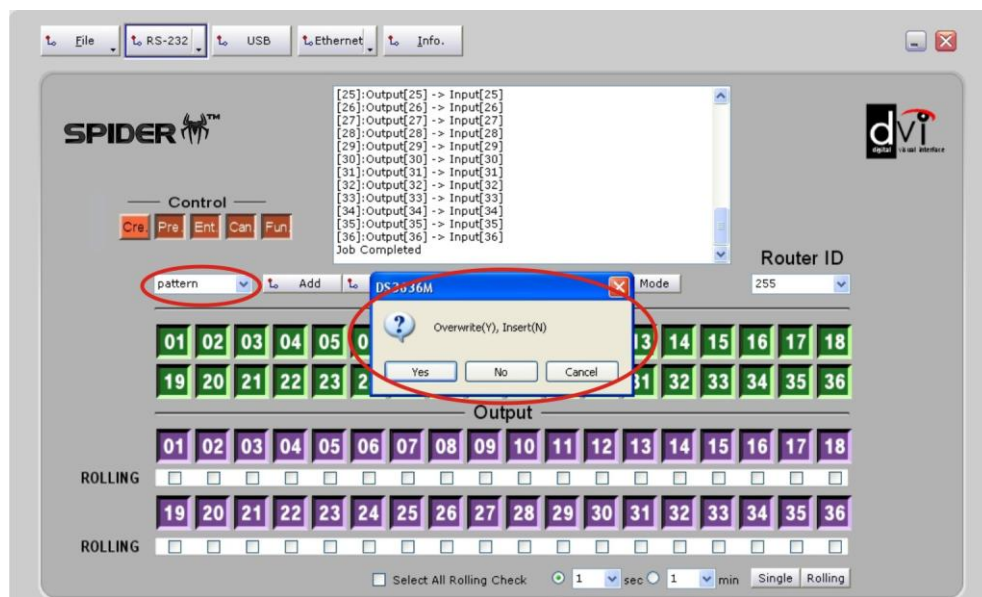
1) PC Operation using Ethernet

Network configuration by PC program.

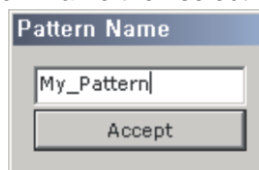
- ① Select right side of **Ethernet** button to configure the network setup as below:



- ② Enter identical IP address as the Router. (Refer to Chap. 2.6.5)
- ③ Users can now create or update the switching-patterns.
- ④ Message box will display Overwrite (Y) or Insert (N).
Select Y: Overwrite the old switching-data
Select N: Create new switching-pattern

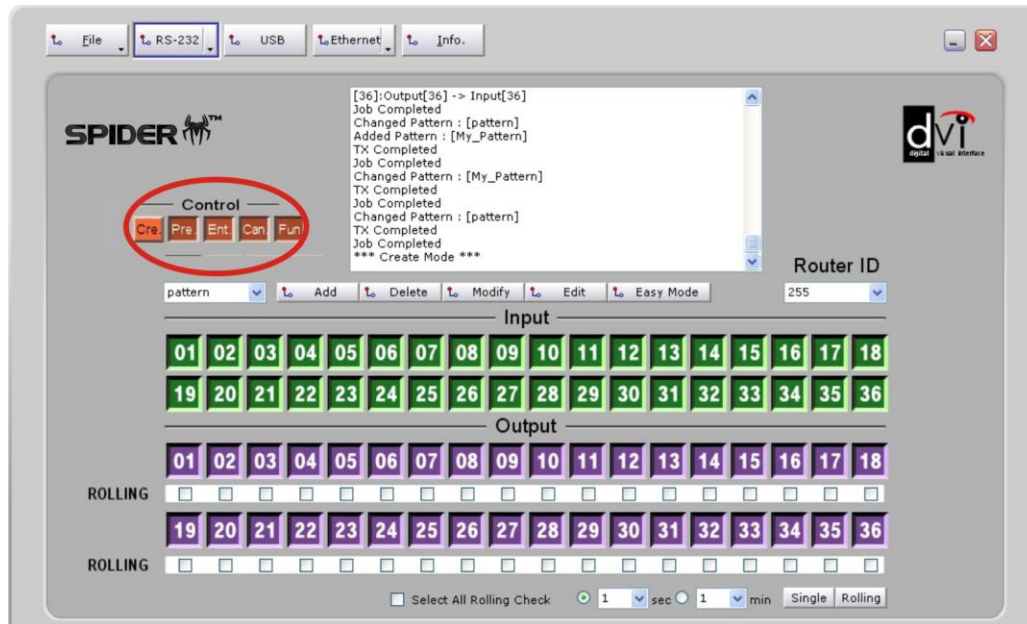


- ⑤ Enter new pattern name then select **Accept**.



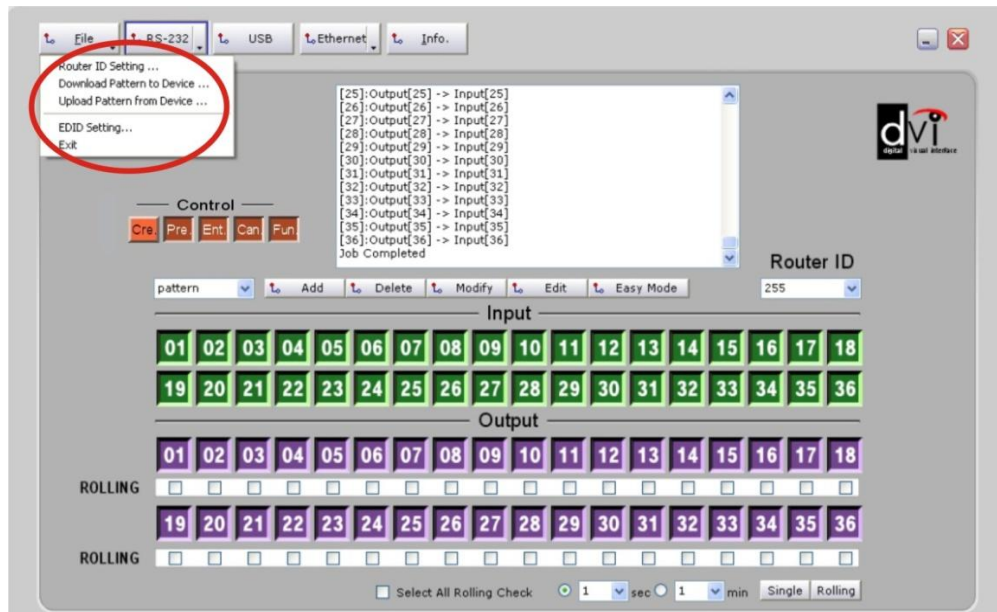
- ⑥ Once the system has updated and created the switching-patterns, **Job Completed** message will be displayed.

2) Control Buttons



- **Cre** (Create)
 - ✧ Configures Input-Output channel connections; same function as the Create-Button on front panel of OMM2000.
 - ✧ Process flow: **Cre** Button → **Input** Button → **Output** Button → **Ent** Button
- **Pre** (Preview)
 - ✧ Verifies current Input-Output connection status; same function as the Preview-Button on front panel of OMM2000.
 - ✧ Process:
 - **Pre** Button → **Input** Button (Single Mode),
 - **Pre** Button → **Ent** Button (Auto Mode)
- **Can** (Cancel)
 - ✧ Disconnects Input and Output; same function as the Cancel-Button on front panel of OMM2000.
 - ✧ Process: **Can** Button → **Input** Button → **Ent** Button

3) File menu

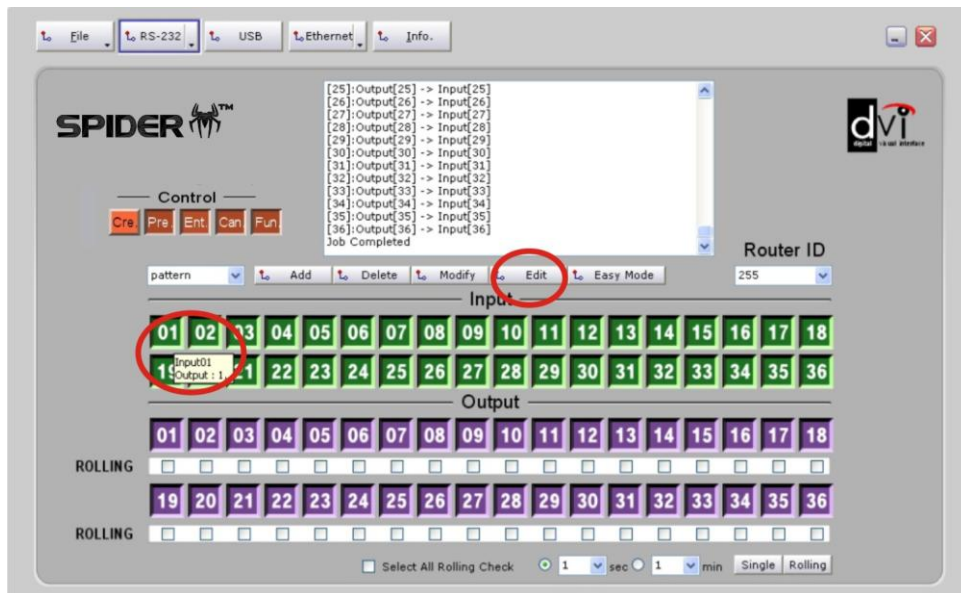


- **Router ID Setting**
 - ✧ Provides temporary control of the router by removing router ID number; used when router ID is lost or forgotten and the Dipswitch is not easily accessible.
- **Download Pattern to Device**
 - ✧ Downloads current Input-Output channel patterns from PC Application to the router.
- **Upload Pattern from Device**
 - ✧ Uploads current Input-Output channel patterns from router to the PC Application.
- **Exit**
 - ✧ Terminates the program on OMM2000.

4) Edit Pattern

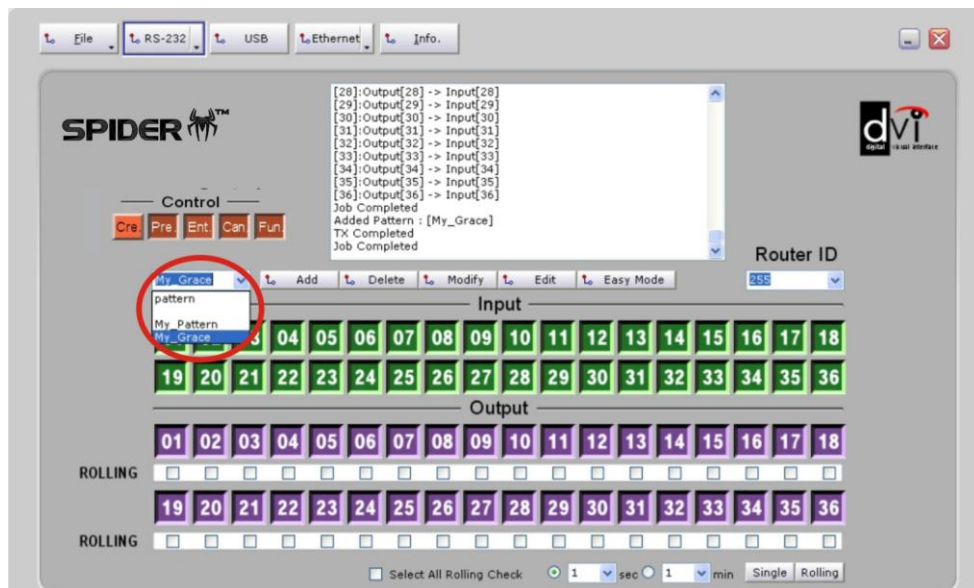
- **Edit:** Modifies the current Input-Output switching pattern.
 - ① Select **Edit** button.
 - ② Current Input and Output names and switching pattern will be shown.
 - ③ Assign new Input and Output names and switching pattern.
 - ④ Select **Save** to store changes.

Scrolling the mouse over the Input numbers will display current connection. Users can check the switching-pattern database in the program folder (c:\program files\ OMM2000).



- **Add**

- ① Set the pattern name as (My_Grace) then select **Add**.



- ② New switching-pattern is displayed.
- ③ Select **Edit** to modify switching-pattern and Input-Output names.

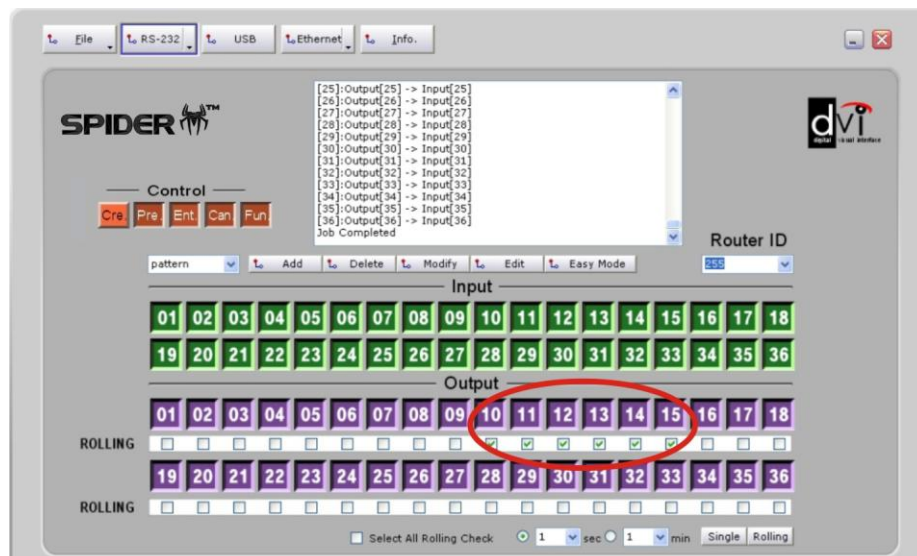
- **Modify**

- 6) Select the switching-pattern to be modified.

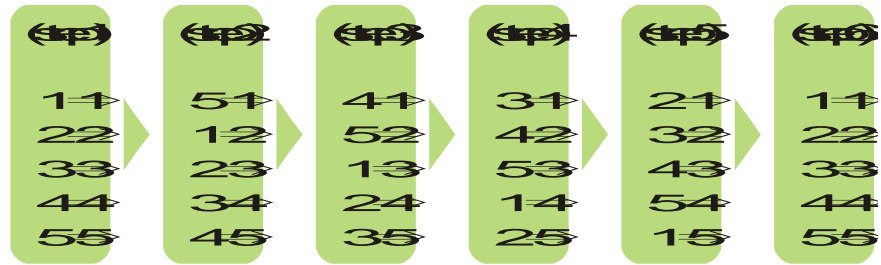
- 7) Write down the new pattern name in the combo box.
- 8) Select **Modify** (similar to “Save As” in windows).
- **Delete**
 - 9) Select the pattern name to be deleted.
 - 10) Select **Delete**
 - 11) Selected pattern name is deleted from the combo box list.

5) Rolling Function

- Allows users to rotate Input sources.
- Used to verify all Input-Output connections.
- Select Output channels to be rolled using the Check Box.
 - ✧ If Output channel was not connected to any Input channel, **Check Box** would not be checked.
 - ✧ Must have at least 2 Output Channels.



- For example:
 - ✧ The current switching-pattern depicted in step 1 below.
 - ✧ To rotate Input channels on Output 1, 2, 3, 4, and 5, check the rolling box 1, 2, 3, 4 and 5 then set the desired interval.



- ✧ The lowest channel Input LED and connected Output channel LED on Router will be turned on. (In this case Input 1 and Output 1 will be tuned on)

Single Rolling

Select **Single**

The Output will change continuously at specified interval from step 1 to step 6 then automatically stop. Rolling can be stopped by pushing the **Stop** button.

The Output image will remain in current state.

UNLIMITED ROLLING

Rotates the Input continuously on the Output displays until the user selects the **Stop**. Stopping the rolling does not affect the pre-saved switching-pattern.

To exit rolling, select new pattern.

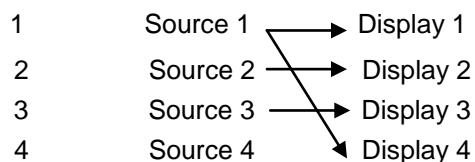
6) EDID Setting

Features:

- Store EDID
- Read EDID from Output device
- Read EDID from Output device and store it in Input EEPROM
- EDIT user defined EDID
- Restore default EDID (in all Input channels)
- One touch store (in all Input channels)
- Store EDID by individual selection
- Basic EDID structure: EDID Block 0 [128 bytes]

Importance of EDID - Example

Four (4) sources with four (4) different types of displays configured as below: -
Source Input 1 is distributed to Output 1 and 4.



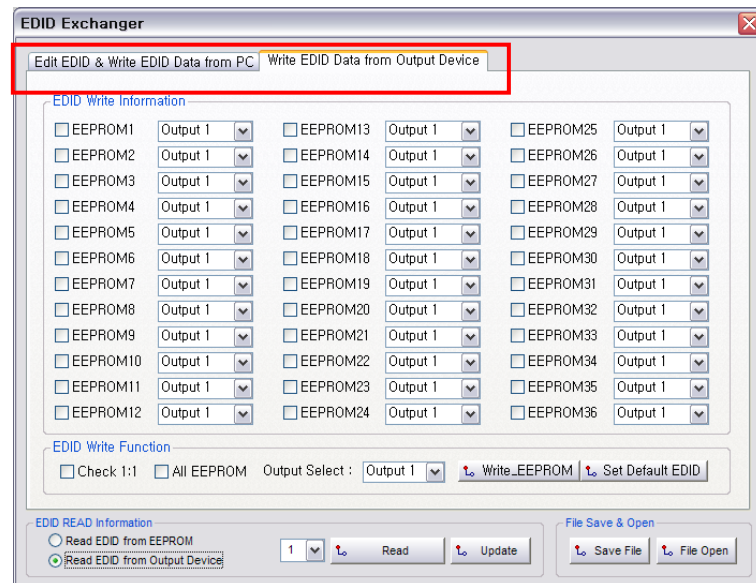
Resolution of Display 1 is 1080p and Display 4 is 1080i
 Input 1 EDID must be set a 1080i for all Output 1 and 4 Displays to show 1080i image.
 If Input 1 EDID is set to 1080p, Display 4 cannot display the image

6-1) Setting EDID

Select 'Files Button', and go to EDID setting.

This section consist of two functions:

- ✧ EDID EDIT & Write EDID Data from PC
- ✧ Write EDID Data from Output Device



1. Write EDID

- ① Select **Files**, and go to EDID setting.
- ② Select **Write EDID Data from Output Device** tab on top.
- ③ Verify all EEPROM # and select OUTPUT#.
- ④ Select **WRITE_EEPROM** to save the EDID data.

[Note]

- **Check 1:1**: Same number will be assigned for EEPROM # and Output #
- **All EEPROM**: Select all EEPROM
- **Set Default EDID**: All EEPROM is reset to factory default values.

2. Read EDID From EEPROM

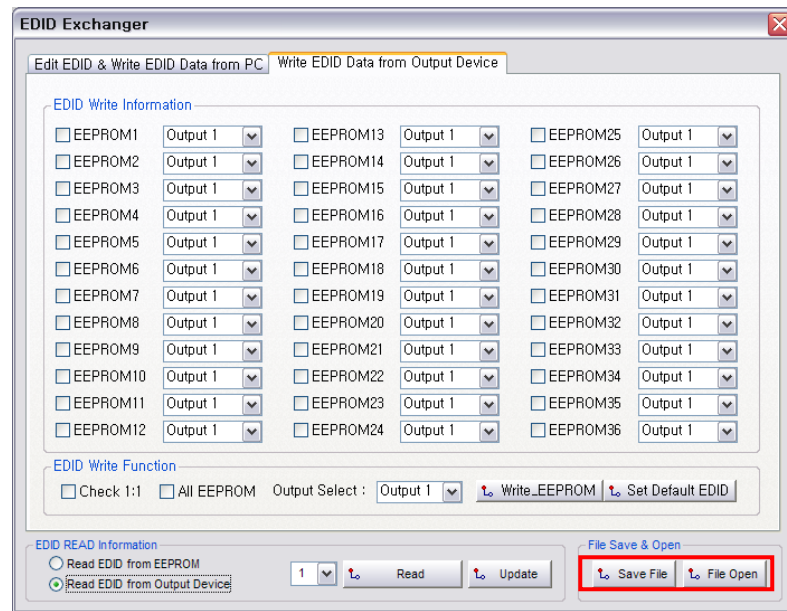
- ① Select **Files** and go to EDID setting.
- ② Select **Write EDID Data from Output Device** tab on top.

- ③ Select **Read EDID from EEPROM** in EDID Read information.
- ④ Select the number of EEPROM and select Read.
- ⑤ Select the Update to update the information to PC.
- ⑥ EDID information will appear in the Edit EDID & Write EDID Data from Output Device, [1] General.

3. Read EDID From Output Device

- ① Select **Files** and go to EDID setting.
- ② Select **Write EDID Data from Output Device** tab on top.
- ③ Select **Read EDID from** Output Device in EDID Read information.
- ④ Select the number of EEPROM and select Read.
- ⑤ Select the Update to update the information to PC.
- ⑥ EDID information will appear in the Edit EDID & Write EDID Data from Output Device, [1] General.

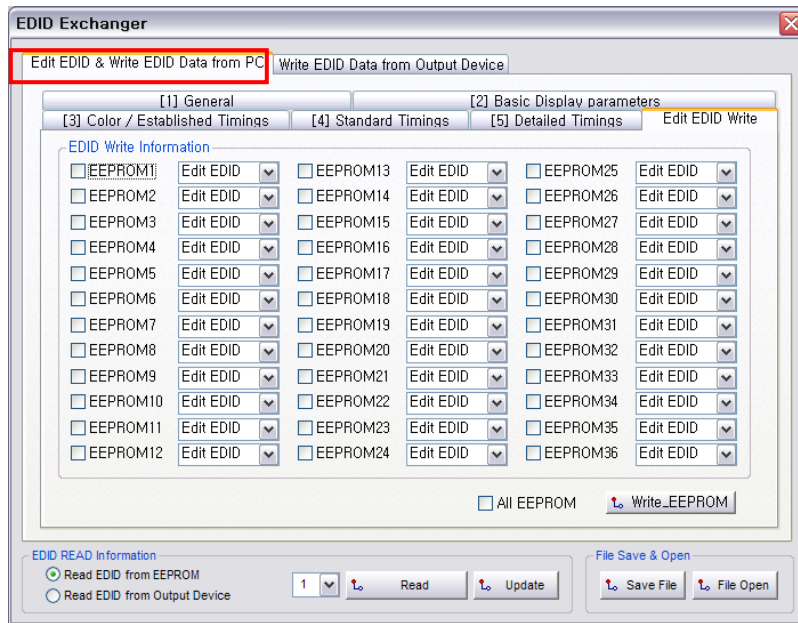
EDID FILE SAVE / OPEN



- File save
 - ① Select **Files**, and go to EDID setting.
 - ② **Read or Edit** EDID data.
 - ③ Select **Save File** to save changes to PC.
- File open
 - ① Select **Files**, and go to EDID setting

- ② Select **File open** to recall saved EDID data.
- ③ The EDID information will appear in the Edit EDID & Write EDID Data from Output Device, [1] General.

EDID EDIT



- ① Select **Files**, and go to EDID setting.
- ② Select **Edit EDID & Write EDID data** tab on top.
- ③ **Edit** EDID data by completing each tab sections from [1] to [5].
- ④ Go to **Write EDID Data from Output Device**
- ⑤ Select EEPROM# and select **WRITE_EEPROM**
- ⑥ Data will be stored into EEPROM

A. Trouble shooting

Problem	Symptom	Solution
No Power	Power LED Off	Check the connection of power cord to the OMM2000 and AC power outlet and that make sure that power switch is in the ON.
No Output	No Output present	Check the Input Output DVI cables are firmly connected to each port of OMM2000. Check the Input and Output connection configuration you want.
		The display is not capable of handling graphic resolution. Check the compatibility of EDID in the EEPROM and attached displays.
		When a single Input is routed to multiple outputs, lower resolution EDID should be selected. EX> Input 1 → Output 1 (UXGA) & Output 2(SXGA) If EEPROM 1 store the display 1 EDID (UXGA), the display 2 (SXGA) will not work due to resolution limit.
		The source has stopped sending a graphic signal. Check the Input source status by connecting it to available monitor without the OMM2000.

B. Features

- Enables to cross switch between one of 36 DVI/HDMI/HD-SDI inputs and any of 36 DVI/HDMI/HD-SDI outputs.
- Supports graphic computer resolution up to 1920x1200 at 60Hz and HD 1080p (1920x1080).
- Offers various user interface using Internet, USB, RS-232C, LAN (TCP/IP) control and Front Touch Panel.
 - 1) Internet connection – allow PC remote program and control by using the IP address on each device
 - 2) USB – USB 2.0 device compatible
 - 3) RS-232C – various baud rates
 - 4) LAN – TCP/IP communication
 - 5) Front Touch Panel – Fully control by color touch display
- Supports three options to set EDID for graphic cards
 - 1) Factory setting – EDID to each input in factory-out and able to restore it any time after taking other options
 - 2) Direct DDC function to set EDID to any source by selecting one of all connected monitors
 - 3) User own program – able to restore any EDID to each source just by once executing connection of wanted inputs to a targeted monitor and keep it until resetting.
- Supports not only DDC but also HDCP for content protection.
- 19" Rack-mountable – Robust & Heavy-duty casing.
- Provides 10.4" touch panel

- Supports configurable input and output channels up to 36X36 (by multiple of 6).
 - 1) OMDI: 6ch DVI input module
 - 2) OMDO: 6ch DVI output module

※Slot Option

- ☐ OMHI: HDMI Input Module
 - ☐ OMSI: HD-SDI Input Module
 - ☐ OMHO: HDMI Output Module
 - ☐ OMSO: HD-SDI Output Module
- Provides reference video source for easy installation.
 - Provides diagnostic function for quick troubleshooting.
 - Support mouse clicking for easy operation.

C. Specification

DVI Module

- ◆ Input & Output Video Signals Type: TMDS (Transient Minimized Differential Signal)
- ◆ DVI Signal Bandwidth: Maximum 1.65Gbps

HDVI Module

- ◆ Input & Output Video Signals Type: TMDS (Transient Minimized Differential Signal)
- ◆ HDMI Signal Bandwidth: Maximum 1.65Gbps

SDI Module

- ◆ Input & Output Video Signals Type:
3G-SDI signal consisting of a single 2.970 Gbit/s serial link, (standardized in SMPTE 424M)
SMPTE format YCbCr (4:2:2)
BNC female SDI connector

- ◆ Video Resolution and Audio format:

Video Resolution	SMPTE-424M	1080p (60/59.94)
	SMPTE-274M	1080i (60/59.94/50)
	SMPTE-296M	1080p (25/24/23.976)
	SMPTE-260M	720p(60/59.94/50)
	SMPTE-259M	480i (59.94), 576i(50)
Audio Format	I2S / 48 kHz	

Common Specification

- Resolution: VGA (640x480) ~ WUXGA (1920x1200), 480~1080i and 1080p
- RS232 baud rates: 19,200bps ~115,200bps
- LAN Port: 10/100 bases
- Power supply: AC 110-240V 50/60Hz / Power consumption: 130W
- Dimensions (W X D X H): 484mm X 265mm X 444mm
- Weight: 21Kg



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